COAL AGE

McGRAW-HILL COMPANY, INC.
JAMES H. McGRAW, *President*
E. J. MEHREN, *Vice-President*

Devoted to the Operating, Technical and Business Problems of the Coal-Mining Industry

R. DAWSON HALL
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Not to Leave the Other Undone

THERE is some fear that the operator who has introduced rock dusting will not realize that, when he has done all that can be expected in this direction, there are still dangers of an explosion at the face that may result in a sufficiently severe explosion to kill many men and fill the mine with a deadly percentage of carbon monoxide. He cannot afford to risk such a result, especially where firedamp is present.

Sprinkling of cutterbars, of bug dust, mine faces and mine cars is needed to complete the program of safety from explosions. We cannot afford to rock dust and leave the face unsprinkled. The cars must be sprayed with water to prevent a distribution of coal dust that otherwise would soon make of no avail the rock-dust program. "Let us be safe everywhere," is the needful resolution—at the face, in the haulageway and in the returns. Anything less than that is not safety. An explosion is still an explosion even if extinguishel near its source.

The article by E. W. Davidson and A. F. Brosky in a recent issue is timely. Let us beware of believing that curbing an explosion in one place means safety in places where it is not curbed. The only explosion that is safe is one that does not occur.

Reasons for Lower Tonnage

IN A YEAR LIKE that just passed, the mine that does not have good coal has a difficult time selling its product and consequently many of the high-ash mines are eliminated or work irregularly. The coal shipped to market, therefore, in 1924 was of greater purity than in the years that immediately preceded it. In fact that accounts for part of the greater efficiency in the use of coal of which we hear much. Coal which is clean is more completely burned than a high-ash coal and yields in the furnace heat units out of proportion to the relation between the theoretical calorific values of the two fuels. With dirty coal more is lost to the ash pit and more air must be used, for it needs a better draught. This air carries heat up the stack.

Last year's coal also was not only cleaner but lower in volatile constituents, consequently it gave more heat per ton. A great proportion came from the fields mining low- and medium-volatile fuels. Furthermore, the miner was more readily disciplined and in consequence produced better coal. The operator also doubtless used more care in the cleaning of his coal in the washery, on the picking table and in trimming the railroad cars. Would it be too much to say that the effective result of the bad market on the efficiency of the coal sold was to decrease the tonnage about 4 of the 13 per cent recorded?

This in its turn had its effect on the fuel used by the railroads, for they hauled less coal by reason of this fact and so needed less to do that work. They also transported it with less interruption and delay, thus again saving coal. On the other hand the coal was probably hauled a greater distance in 1924 than in preceding years and thus more coal was used in the transporting of it.

It's a Tough Struggle, Mates

SOMETHING is going on among the Mine Workers' leaders in Illinois, strongest of mine labor strongholds. The state has gone through a hard 1924 and faces a hard 1925 in spite of the undeniable fact that industry is going to take a great deal of coal during the next twelve months. It is hard enough on operators; but it is the miners we are thinking of just now. We have heard some most conciliatory language from Illinois union leaders recently, especially from Vice-President Harry Fishwick and from President Frank Farrington, who, at the recent Illinois safety conference, admitted he had defended contract-breaking miners who were without defence, but that today that sort of thing is gone forever.

And now President Farrington is trying his best to awaken his men to action. They must do something to save themselves from plain starvation and the collapse of their union. *He* can't make the suggestions. They would decapitate him for proposing anything that sounded like concessions to their harassed employers. The proposals must come from *them*. How bring them around to make such proposals? That is the issue.

Farrington began his best efforts in that direction at the last state convention, when he told his men that they are so hard put he could think of no way by which they could hold their jobs and their wages unless giant power plants were to be built at mines and power consumption to be multiplied many fold. The response from the rank and file was hardly noticeable. Now Mr. Farrington comes out again warning his men that something must be done. He wants a scientific survey of the industry in Illinois made by competent engineers and scientists such as compose the American Economic Association to find ways and means of increasing the consumption of Illinois coal by new methods.

In the official newspaper of the Illinois Mine Workers, the proposal is set forth. The wind-up is vital. All of the well-known union theories for the remedy of coal's ills are set up and knocked down. The statement then closes with this: "It would be well for our members to put on their thinking caps and furnish their answers to the question: 'How can the cost of Illinois coal at the mine be reduced to the point where it can compete with Kentucky coal in the Chicago market without reducing the wages of Illinois miners?'"

Thus President Farrington puts it up to them. These giant power schemes are far in the future. What are the miners going to do right now? They well know how they could reduce the cost of Illinois coal by agree-

ing to important changes in their working agreement and by other concessions. But that would be receding. Farrington cannot advise it. But he knows it must be done. How soon will the miners wake to action?

Country Folk

BETWEEN COUNTRY folk and city folk there is little difference in intelligence; in fact the man who lives in the country being dependent largely on his own wits is better rounded and more intelligent in consequence. But there are intellectual disadvantages nevertheless. In areas where population is congested many industries having a variety of needs are congregated. Each industry out of its peculiar difficulties develops a technique whether in the country or in the city.

Thus coal mining developed the metallic rail, and, in a large degree and for its own use, the steel tie. It discovered the steam engine, the plunger pump, the electric locomotive and the fan. Even the steam engine and the gas retort were introduced by mining engineers. The beginnings of many of our industrial developments came from the mine. But it remained for the congeries of other industries to make these equipments more efficient.

Men in the cities are more cognizant of industrial progress because they learn what other industries than their own are doing. They mingle with men having problems of their own, and progress is more rapid. The mining man, brilliant in improvisation, is deprived of the power of imitation, not having others to copy. He is likely, therefore, to lag behind. His progress, except so far as it comes from his own inherent genius, spurred on by his own peculiar problems, is likely to lag.

The industries in the cities, contiguous as they are to one another, are mutually stimulating, among other reasons because the directors and presidents of industries in a city are the prime movers in other industries and so readily transfer from one branch of industry what they find in another. The engineers in one line of manufacturing are often engineers for other lines. They, therefore, are not slow to shift their experience from one form of their endeavor to another.

Furthermore, because in cities are congregated that large body of experimenters, students and investigators, which every civilized country possesses, it is in cities largely that progress is made. The coal field needs to remember this, and be forehanded in learning what other industries are doing. The other lines of business have their peculiar problems. Out of these come new devices and particular studies that, while peculiarly applicable perhaps to any one kind of industry, are likely to be greatly helpful to mining engineers of all kinds.

In many cases the needs of an industry are so great for some certain form of development that the manufacturer's engineers, who make a study of that industry, can spend money in research to find means for providing for those needs, the companies can afford to purchase, test and develop that equipment and the coal industry would do well to be alert to all those developments, many of which will have a value in coal operations little less important than in the originating industry.

The study of these advances is the duty of every mining engineer. He should not wait for the manufacturer to discover the value of his device to the coal industry, much less should he resist the introduction because it has had its origin and development in an alien industry or industries. The laws of nature are the same everywhere; adhesion, cohesion, friction, gravity, chemical, electrical and magnetic phenomena, also human psychology do not vary in substance from place to place; so there is no reason why the experience of one should not be permitted to bear on the problems of another.

Disgruntled Consumers

HABITS are hard to change. Salesmen recognize this condition and term it "buying *re*sistance." However, sometimes a salesman discovers a converse situation which we may be pardoned for terming "buying *as*sistance." The prospect is eager to buy; he doesn't need to be sold. He doesn't have to be told that the product is better than some other used for the same purpose; he seems not to care. It may cost him more than the competitive product; it may not give as good service; it may give him constant trouble; he doesn't even inquire. He is in the market for the product and doesn't need a selling talk.

Some consumers feel that way about oil. They have bought a bad quality of coal, and they are "sore clear through." No argument is necessary. They are completely "sold on" oil, and they make no inquiries. It is useless to tell them that the coal they have just bought is not representative of the usual product of the coal mine, that their particular dealer is dishonest or unfortunate and has bought from a dishonest producer. The consumer sees slate or bone in his coal, and that is evidence enough for him. He is willing to be a victim even, so long as he is the victim of his own judgment and not of some unscrupulous salesman.

Once provided with an expensive equipment, he is set in his determination to use it. Oil deliveries may be slow and uncertain; the power may fail that operates his oil furnace, and he and his family may go cold, but he has spent his money and he has told his friends that he will not burn coal. He is determined to teach the "coal barons" a lesson. He is economical and perhaps not too happily situated financially, so he does not want to make changes in his furnace. He remembers that he might go cold if he had coal like Mr. So-and-So furnished him. So he "stays put."

The better way for the operator is to endeavor to prevent him getting such coal by creating in the industry a better sense of the importance of clean coal, by keeping control of culm banks that might be shipped to market improperly cleaned, by purchasing other refuse banks that might fall in bad hands and by advocating a system of inspection that will enable him to say that his coal is inspected and is clean. The dealers in anthracite should do something to eliminate dishonest dealers and producers as far as that can be done lawfully. And, further, they should improve their own standards.

There is too much variation in the price of independent coal. The difference is so great as to suggest improper preparation, and the public has a right to be protected against those who look upon coal production as a means of fleecing the public. The situation of the anthracite industry, threatened as it is by oil, speaks loudly and insistently in favor of some more active effort to rid the market of bad coal.

Reducing Costs by Proper Supervision of Electrical Equipment

THE mine electrical engineer's job is not so much to have repairs made as to prevent their occurrence, to keep the machine fine and fit rather than to wait till it has become sick.

Keep Records of Your Equipment, of Special Jobs to Be Performed, of Costs — Exhibit Economy as Well as Advocate It — Use Motors Having Reasonable Over-Capacity but Not Too Large

BY J. H. EDWARDS
Associate Editor, *Coal Age*
Huntington, W. Va.

THE EVER-INCREASING use of electricity in coal mining yearly enhances the importance of electrical and mechanical costs in the total expense of producing a ton of coal. It behooves the operator to know that he has the right man supervising the utilization of power and the maintenance equipment, also that he has the mine organization arranged and instructed so far as is practicable, so that this man can be rightfully held responsible for the efficient use and repair of all machinery.

Too often the electrical man and, sometimes, his superior does not realize that this department should be charged with the duty of cutting operating cost and of spending money judiciously for new equipment as well as for the making of running repairs. The wide-awake electrical man who is handling his work in a creditable manner and who is keeping himself well informed regarding new development is a busy fellow, and therefore has little time left to think or learn about the business end of coal mining. Every once in a while he should be reminded that if the company is to prosper he must do his part to keep the production cost below the market price.

It is gratifying to note that the electrical man is being looked upon more and more as a preventer rather than as a doctor of "sick" machinery. In the past there were many operators who engaged their electrical men solely with the intention of having some one on the job to repair machinery that had broken down. They believe that the more time these men were busy and the harder they worked, the better men they were for the job. A breakdown was a regular occurrence and something to be expected, rather than expensive evidence that the electrical engineer and his assistants were performing inefficiently their duties of operating and caring for the equipment under their charge.

The progressive coal operator of today pays his electrical man with the exceptation that he will avoid breakdowns as far as possible and will repair those that occur in such a way that further trouble will be avoided or at least so that a re-occurrence of trouble will be delayed as long as can be reasonably expected. He realizes that every breakdown has a reason, either avoidable or unavoidable, and that comparatively few are of the latter class.

Some of the ways in which electrical men can improve their efficiency, help to increase production, and reduce production costs, will now be considered. Personal efficiency leads in importance, and therefore the items which fall under this head will be discussed before passing to those of a strictly engineering nature.

INTEREST IN WORK NECESSARY

A man must have a real interest in his work; otherwise time drags, the work is drudgery, and the employer gets small value for the salary paid. It is questionable if a man can acquire an interest in his work by deliberate cultivation. It is a matter of environment, of recognition for achievement and perhaps of material reward. It appears that this phase—interest in the work—is one in which the employer can do the most toward correcting. By material reward is not meant salary paid but rather some form of profit to the electrical man which depends directly upon the prosperity of the company or inversely upon the electrical department cost. Recently I noted a case where the head of a coal company's electrical department seemed to take an exceptional interest in his work and found that this man owned several shares of the company stock.

Few in the operating organization have more varied duties than the electrical man, and therefore it is important that he be systematic; in other words he should use his head and spare his feet. The possession of equipment records which give the name plate data and perhaps the principal dimensions of each piece of machinery is an evidence of system. The records may consist of no more than pencil notations in a time book or may consist of typewritten loose-leaf sheets. The idea is the same. These records afford a place to store the kind of information which is often needed and which sometimes cannot be obtained without much time and effort.

I recall a chief electrician who handled his work by making notes of every special job which he thought should be done and who then consulted this list and picked out the most important whenever the run of urgent work slackened sufficiently so as to afford an opportunity to attack this special job. The electrical engineer had been urging this man for several weeks to complete a certain piece of work of this kind. Fi-

NOTE—Article read at the fourth annual convention of the West Virginia-Kentucky Association of Mine, Mechanical and Electrical Engineers, Huntington, W. Va., and entitled, "Reducing Costs by Proper Supervision of Electrical and Mechanical Equipment."

nally, when the argument got rather warm, the chief electrician produced his list and then asked the electrical engineer if his pet job, the completion of which he was urging, was half as important as many that were on the waiting list. As a result the electrical engineer was convinced that the chief electrician was not asleep on the job but instead was getting the work done as fast as his force of men would permit.

Every man should cultivate thoroughness. The mine electrical man is often confronted with what appear to be peculiar actions of his circuits and equipment and he should make a real effort to find a satisfactory explanation of each as it occurs. It is only by this persistance in getting to the bottom of things that he will elevate himself from the cut-and-try type of man.

The work should be handled continually in such a way that a new man could step in, at any time, and take it over without difficulty. Other men in the department should be taken into his confidence, and important information should be recorded in some other place that in the brain of the chief electrician. Sketches of important circuits which are difficult to trace and similar information should be prepared and filed where quickly available to anyone called upon to make repairs. You have all seen the man who believes that the way to hold a job is to keep everything under his own hat, so that only with considerable difficulty can anyone step in and take charge of the work. He may hold the job by such methods but he is doing the very thing that is most likely to stop him from stepping out of the job and into a better one.

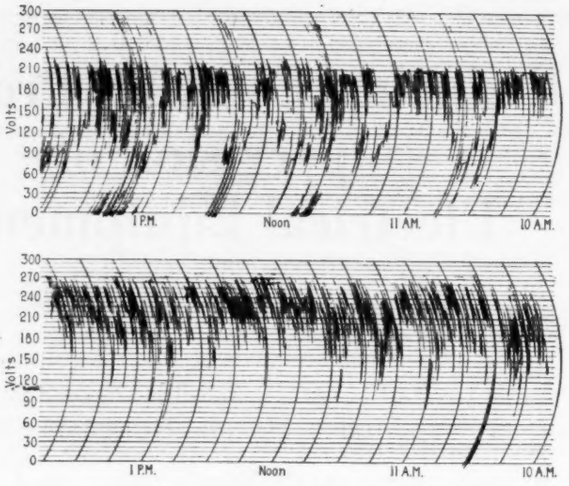
PRACTICE WHAT YOU PREACH

The electrical engineer should set a good example also to those in his department. For instance, it is almost useless to preach to others the necessity for saving electricity by turning off unnecessary lights, when you do not turn them off yourself. The same is true regarding the conservation of material. A man should never pass a trolley clamp, hanger or other valuable material lying where it is likely to be buried or lost to use and yet expect others to pick it up. It is often said of the great railroad and shipyard builder, Collis P. Huntington, that when inspecting his mammoth shipbuilding operation at Newport News, Va., he never passed by even a rivet that he thought was likely to be lost. Instead, he would pick it up and put it in a conspicuous place and at the time say to anyone who happened to be with him or nearby, "If that was a nickel it wouldn't have been left there."

It seems fitting to remind electrical and mechanical men that more smiling explanation and less rebuke will help to promote respect for mine equipment. Generally those operating machinery do not report to the electrical department and therefore must be treated diplomatically. It is worth much to have the friendship of these fellows. By co-operating with the repair department they can do wonders toward reducing the cost of equipment upkeep.

Sometimes it is well for the electrical man to ask himself this question, "Am I handling my work or department in the same way that I would if I owned this mine?" Such an analysis would in many cases prevent him from making an unjustifiable expenditure that will eliminate some minor aggravation or to carry through some pet idea.

One more personal efficiency item which should be mentioned is the need for persistence in following out



Actual Charts of Voltage Delivered

These were taken at about the same point in a mine. The upper which shows an average of about 180 volts was taken to prove the necessity of a larger feeder. The lower, averaging about 230 volts, was taken under the same load conditions but after the new feeder was installed.

a good idea. Quite often when a new man goes on a job he sees many things which need attention or alteration but proceeds to get inured to them. Perhaps a certain job requires the permission of the boss but when it is outlined to him he fails, at the time, to recognize the necessity for the work. If on second thought the electrical man knows positively that the proposed idea is a good one he should not give it up, saying, "I have told the boss about it; if he doesn't want to do it, then it's alright with me." Remember that, at the time, the boss may have had more important matters on his mind, but at a later date may prove enthusiastic over the idea. Don't worry him, but be sure that you have made the proposition plain, and at opportune times remind him of it. I recall an instance where it took four years to persuade the boss that he should purchase an arc welder for a mine repair shop. In the first six months this welder saved more than its cost.

The engineering phase of this subject resolves itself into four natural divisions, namely, reducing power cost, saving by wise purchasing, lowering repair cost and shortening the time lost by breakdowns.

CUT COSTS ON PURCHASED POWER

A large percentage of the mines are now purchasing power; therefore the possibility of affecting a saving in the power item of coal production cost is attracting wide attention. There is not the same opportunity, for saving, with the individual power plant, because in this case a material reduction in demand or in kilowatt hours used is reflected only in a slight degree in the total power-house cost. This is especially true of those mines which in their individual power plants use low-grade screenings as fuel.

In the various coal fields we find in force many widely differing forms of power schedules, but in all there are two points of similarity, these being that there is a demand charge and an energy charge. The two principal ways in which rate schedules differ are in the inclusion or omission of a power-factor clause, and in determining the monthly demand charge.

In some cases the demand is determined and billed each month as metered, either directly by an indicating demand meter or printometer, or by calculation from

a continuous graphic chart. Another common method is the fixed demand billing in which case the original amount is an estimate and the power company may raise the demand at any time when they prove by a temporary meter installation that the actual demand is exceeding that previously established. No provision is made for crediting the consumer with a decrease; therefore he continues to pay during the remaining term of the contract a demand equal to the highest that the power company has imposed.

METER METHOD SAVES ELECTRICITY

The first method, determining the maximum demand each month by meter, eliminates guess work and argument. It is the method generally preferred by the progressive electrical man because it affords him an unrestricted opportunity to effect a saving by careful supervision of the use of electricity in and about the mines. It is a mistaken idea that with a fixed demand it is useless to try to hold down the peak load. A heavy demand lowers voltage, which is costly, because of the slowing down of the equipment, and it runs up the energy charge, because the line loss increases as the square of the current.

At first thought it may appear that the amount and time of day of a mine load is absolutely fixed and therefore the demand is almost beyond control. This may be true in a few cases. However, most mines do offer opportunities of this kind. A mine with a heavy pumping load offers the best chance. If the sump area and pumping capacity are sufficient, as they should be, to handle the water during extremely wet seasons, then there is a large part of the year during which the pumps can be left idle each day for several hours at a time. In such a case the power bill can be reduced materially if care is taken not to run the pumps during hours of heavy load. As an example, assume that a 100-hp. pump is operated unnecessarily during hours when the remainder of the mine load is the heaviest, then at a demand charge rate of $1.65 per kw., the power bill for that month is increased approximately $125.

The mining-machine load also has a certain degree of flexibility, that is, the cutting can be done during the day or during the night. At mines where cutting is now being done during the day, it is certain that, if the electrical men will show in dollars and cents what savings can be made by a change, much of the day cutting will be transferred to the night shift. One 50-hp. mining machine operating in the day time will add about $30 per month to the demand charge on the power bill.

Many are the ways in which the wideawake electrical man can cut the power-demand cost. A particular instance is known where a mine paid approximately $1,000 demand charge for operating for only one day during a certain month. This mine had been shut down for several months but unluckily resumed work on the day that the demand meter was read. Had the electrical engineer advised the mine management of this possibility, no doubt the opening of the mine would have been delayed a day or two. That first day's coal cost about 50c. per ton more than the market price.

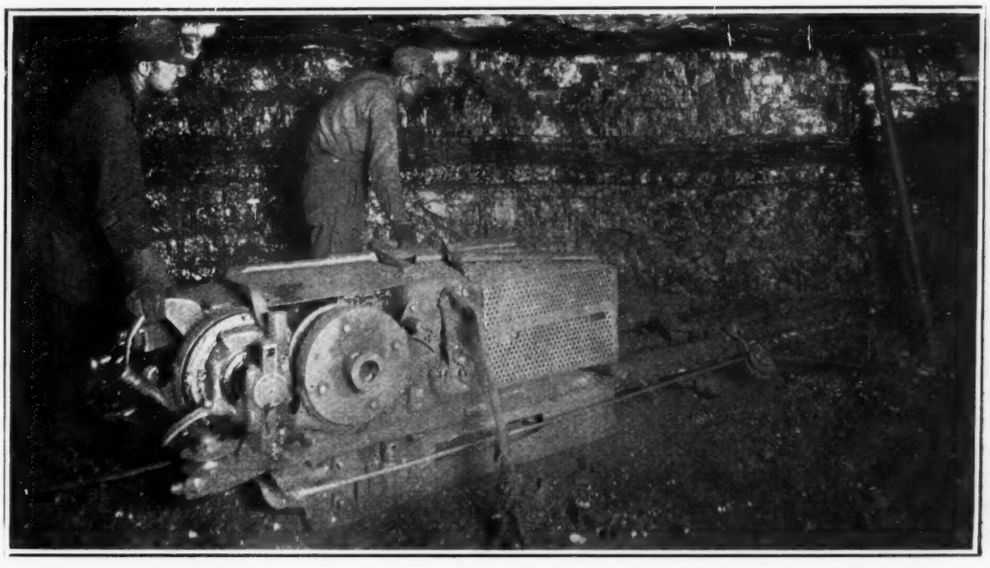
A few of the possible methods of reducing the current, or more properly the energy, portion of the monthly power bill will now be discussed. As a rule ventilation presents the best opportunity for power saving, but the two important features, fan design and condition of airways seldom come under the jurisdiction of the electrical department. That department, however, can be instrumental in bringing about changes for the better. Tests can be made which reveal the low efficiency of old installations, and the results of these tests can be called to the attention of the management. Fans which twenty years ago were considered the last word in efficient design are now being replaced by new fans which save their cost in a few years.

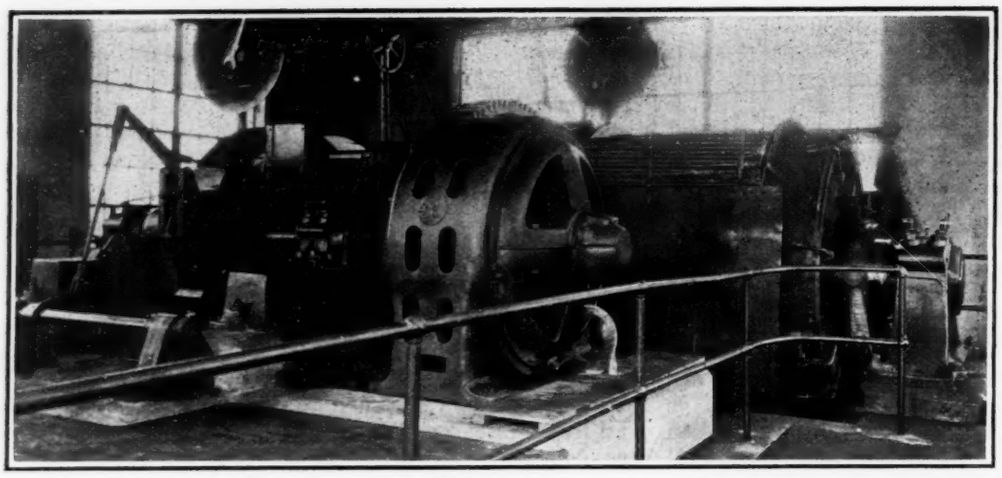
DRIVE MINE FAN ECONOMICALLY

Because mine ventilation is, generally speaking, a 24-hr. load it is important that the proper motor be used. Variable-speed control is desirable on many mine fans but is often obtained by highly inefficient methods. When direct current is used the speed can be controlled economically by the use of a field-controlled variable-speed motor and with alternating current by a brush-shifting motor. Both of these cost considerably more than the constant-speed motors and therefore are not widely used. The conditions which, in driving mine fans, prove the greatest energy wasters are operation of a direct-current motor below rated speed by use of resistance in the armature circuit, the operation of a slip-ring motor below rated speed by the introduction of resistance in the rotor circuit, and the use of large underloaded induction motors.

Undercutter at Work

The use of sharp bits shaped to suit the coal, the setting of these by gage, and keeping the machine free of cuttings can reduce the mining machine load to a third of what it may be if these precautions are neglected.





Steam Engines Supplanted

So sure are many companies of the advantages of electric power that they are changing most of their equipment to electric drive as quickly as possible. Here is a converted steam hoist at one of the mines of the Grauton Coal & Coke Co. at Grauton, Pa. The motor is a 500-hp. unit.

Probably the most common fault in fan drives is excessive belt slippage. This is the natural result of trying to drive a low-speed fan with a moderately high-speed motor and yet using the old rule-of-thumb method to determine the distance required between belt centers. The use of a well-designed idler having a pulley of large diameter and permitting a short belt center is gaining favor as an economical and reliable drive for mine fans.

SHOULD CONSIDER OUTSIDE LINES

Next in importance among the ways in which the electrical man may reduce the energy cost is by providing and maintaining ample carrying capacity in the various circuits. This naturally applies in the greatest measure to the direct-current circuits which for the most part are inside the mine. However the alternating-current lines supplying substations, large fan motors and the like are also deserving of attention. When an expenditure for heavy copper is being considered it should be remembered that the depreciation on such an investment is small compared with that on other mine equipment. Many cases can be cited of copper wire having been used twenty years and later recovered and reinstalled in a new location where it served the purpose as well as new material.

Due to the poor load-factor of a direct-current mine the size of feeders is generally determined by delivered voltage rather than by a balance of the energy loss against the interest on the investment. The use of a graphic meter at the face or at a main point of distribution to record the voltage delivered during a 24-hr. period, when the mines are working to capacity, is the best way to determine whether the circuits need attention. An average voltage drop of 20 per cent during the peak-load period of the day is about the maximum which can be economically justified, but many mines can be found in which a 50-per cent loss is endured. Just consider what this means; one-half of the power during peak loads is being lost by the conductors being of insufficient capacity.

In attempts to correct low delivered voltage it is a common fault to see additional positive feeder installed before the rail has been bonded to a reasonable degree of perfection. A test in a mine where the foreman wanted additional copper and believed that the bonding was efficient revealed the fact that the bonding was only 49 per cent perfect. After the replacement of many defective bonds, the bonding of switches and the addition of many crossbonds, it was found that additional copper was not necessary.

One of the surest and quickest ways of determining if the rail is properly bonded is to test the resistance of the complete circuit. The resistance of the copper portion of the circuit is easily calculated and can be deducted from the total thus giving the resistance of the track alone. This actual track resistance compared to the expected resistance of a properly bonded track, as found in engineering handbooks, indicates the perfection of the bonding. This figure should, and can, be kept well above 90 per cent.

A few other suggestions for reducing the energy portion of the coal-mine power bill are as follows:

(1) Elimination of electric heaters. There are but few instances about the mines where heating with electricity is justified. One, innocent looking, 10-amp., 110-volt heater, if operated continuously, at 3c. per kw.-hr., will add $23.76 to the monthly power bill of your company.

(2) Do not use unreasonably large motors. It is recognized that in mining work it is good policy to buy motors of excessive capacity. However, at many mines this is carried to extremes. It is easy to specify a motor which will be sure to handle a certain load but it takes good judgment and engineering to specify the smallest motor which will do the work and yet have only a reasonable overload capacity. A specific case, was the purchase of a 20-hp. induction motor to operate a small mine shop where no more than 5 hp. was ever required. A test should be made of every stationary motor. With such data at hand it is often possible to determine where a motor could be shifted advantageously. Then when a motor is provided for a new piece of equipment, the big motor could be moved from the job for which it is too large and could be replaced by a new motor of smaller but suitable size.

(3) Whenever possible use alternating-current rather than direct-current motors. This saves conversion losses, makes possible the use of smaller substation equipment, reduces maintenance expense and sometimes makes it unnecessary to operate a substation at all hours.

(4) So far as is practicable, shut down all converters or motor-generator sets which are not needed to carry the load. This practice can often be promoted by the provision of convenient switching arrangements.

(5) Promote the use of suitably-shaped, properly sharpened and rightly tempered mining-machine bits. Instruct the right persons regarding the necessity for setting bits by gage and for keeping the machines clear of cuttings.

(6) Use time switches on street-lighting circuits and the like.

(7) Use every means possible to discourage the practice of operating mine locomotives with the brake set.

(8) Mine drainage. Call attention to the necessity for using larger pipe for long discharge lines. Grasp opportunities to prove, by tests, how much power can be saved by using larger pipe. Remember that the size of the discharge opening on the pump has little bearing on the size of line which should be used. Many pump users have the mistaken idea that it is never necessary to use pipe which is larger in diameter than the pump connection.

Next in order is the saving that can be made by judicious purchasing of materials. The electrical man is seldom the purchasing agent, but nevertheless he is usually the man who specifies the kind and quality of material needed. He is concerned with two classes of material, supplies such as trolley hangers and insulating tape on the one hand and special equipment such as motors, automatic starters and the like, on the other.

TEST NEW EQUIPMENT THOROUGHLY

The chief precaution to be used when ordering supplies is to be careful when deviating from the standard well-known lines. No matter how good a new appliance looks do not purchase large quantities of it with the first order. Try out a few units and give them a trial long enough to be thorough. A three-months test of a certain new type of switch showed no defects, but a year of service proved it to be unsatisfactory.

Particular care should be exercised when buying a special piece of equipment, for if it does not suit the job it may become a "white elephant." At the mines new equipment such as tipple machinery, hoists and electric motors can often be seen which have been on the ground several years but have not been put into use. An inquiry as to the reason for the presence of this idle equipment ordinarily is answered in about this manner: "Someone leaped before he looked." Costly errors have been made by buying large squirrel-cage motors for operating machinery requiring a motor of high starting torque. Conversely, money is often wasted by buying slip-ring motors for duty where a plain squirrel-cage motor would answer.

The success in reducing repair costs depends in the most part upon the thoroughness and ingenuity of the electrical man, but in addition, requires the hearty co-operation of the other departments. The broader possibilities for saving lie in a reduction in the amount of repairs rather than in a reduction in the actual cost of making any kind of repair. With this in view some of the larger companies employ an inspector, often designated around the mines as the "coroner," to investigate and report on the cause of each breakdown. His reports form the basis for devising means and methods of eliminating preventable failures.

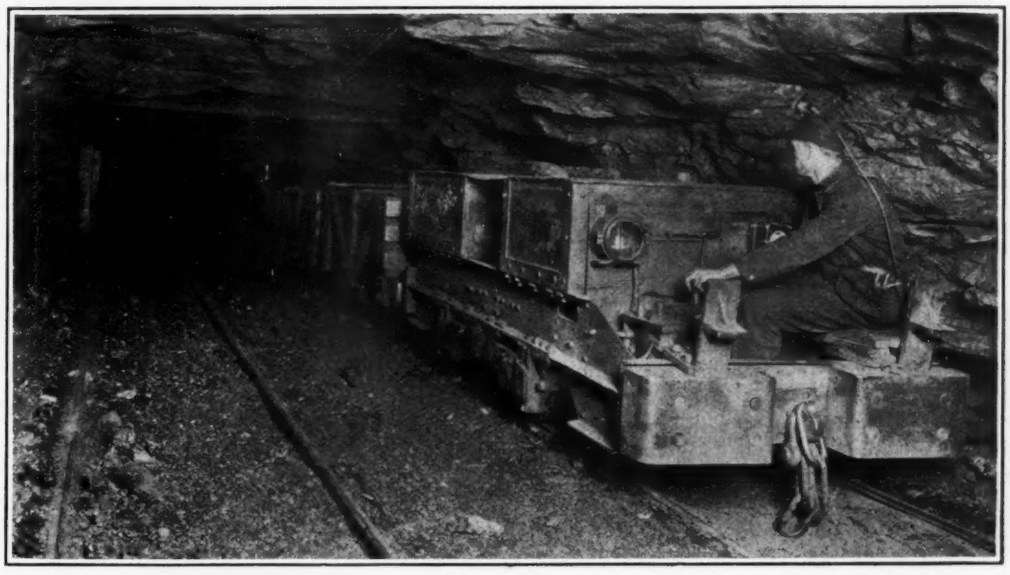
It is recognized that repairs cannot be wholly eliminated; however most of them are chargeable to improper handling of equipment or to its visible defects. The wearing of locomotive tires is considered unpreventable; therefore here is an example of the class of repair in which the possibility of saving lies in cheapening the cost of the repair or replacement. Filling in tires with the electric welder is becoming usual, nevertheless many staunchly oppose this practice.

A reduction in the time lost due to breakdowns is the last but not least of the ways in which the electrical department can help to reduce the cost per ton. In production one of the largest items is day labor, and when there is a shutdown or a slowing down of equipment that item of cost is increased almost proportionately. Ordinarily if every economical means is utilized to reduce the repair cost, then the shutdowns due to failure of equipment are few. The keeping in stock of spare parts requires considerable experience and judgment. Small but important parts of low cost should be kept in stock at all times, but the chance of failure and the cost of time lost should be carefully considered before large expensive spares are purchased.

Those responsible for the electrical and mechanical equipment should remember that they need to devote greater and more continuous effort to their work. Each man should ask himself this question, "Am I doing anything which is lowering, or will in the near future, lower the cost of production?" There is a great advantage in being connected with a successful company, but such a company can continue to be prosperous only by being always on the alert to hold the costs down where they can meet the ever-increasing competition. Operators need greatly to realize the possibilities of reducing costs by having the right man supervising their electrical and mechanical equipment and the necessity of giving this man a fair chance to show what can be done.

Battery Haulage

During the past year great impetus has been given to the use of the storage battery. Not only is the electric accumulator employed in mine haulage as here shown but is also used to drive mining machines and other underground equipment. Many advantages result from the use of the storage battery, chief of which are its steady voltage and a better load on the power plant.



Strikes Curtail Canada's Output in 1924

Princess Mine, Sydney Mines, Nova Scotia — *Nova Scotia Steel & Coke Co.*

Labor Troubles Coupled with Depression in Steel Industry Causes Production Loss of 4,000,000 Tons—Higher Wages in Nova Scotia Offset by Reduced Working Time—Imports Also Decline

BY S. J. COOK
Chief of Mining, Metallurgical and Chemical Branch, Dominion Bureau of Statistics, Ottawa, Canada

WHILE metal mining in Canada advanced to new high levels in 1924, the production of coal from Canadian mines dropped off about four million tons from the output in 1923. The total for the year was 13,103,000 net tons, valued at the mine at $54,280,000, as compared with $72,058,986 reported in the preceding year. Nova Scotia mines showed a loss of more than 700,000 tons from the total for 1923; the output from British Columbia coal mines fell off as much as the loss in the Nova Scotia mines; New Brunswick output was less by 71,000 tons; Saskatchewan's loss was 31,000 tons, but it was in Alberta that the greatest reduction was sustained, for the output of 4,525,000 tons was 2,300,000 tons less than the total for 1923.

The output of coal by classes included 9,512,000 tons of bituminous coal, 559,000 tons of sub-bituminous coal, and 3,032,000 tons of lignite. Labor troubles in District 18, in which some of the principal coal mines of Alberta and British Columbia are located, were the chief cause of the lessened output. In this respect the situation at the end of the year seemed much more promising. At most of the mines agreements had been reached and the outlook for the immediate future was considered much more hopeful than it had been for many months. Table I shows the estimated output of coal from Canadian mines by provinces and by grades in 1924 with comparative data for 1923.

Employment in the coal mining industry continued to be a problem fraught with many difficulties. The bargain driven by the men in Nova Scotia proved less advantageous than was expected by its promoters, as broken time offset the gains due to higher rates of pay. But the reduction in the total tonnage produced due to the closing of some mines had a compensating effect in the greater efficiency developed in the mines that continued to operate. Improved methods of working were adopted, which permitted better concentration of effort, and as a result in several instances new mine output records were established.

The Dominion Government helped the coal producers of the maritime provinces to market their coal at a lower cost by providing a subvention of $150,000 to aid in the delivery of coal to points in central Canada. The depression in the iron and steel industry, the principal support of eastern Canadian coal mines, however, greatly reduced production, for when the British Empire Steel plant in Sydney is in operation the entire output of two collieries is required to meet its needs. The consolidation of the different coal companies had done much to establish the industry in Nova Scotia; at the present time, it is said, the organization is complete and efficient and production capacity in the operating units is steadily gaining. Slow progress in the wage conferences, however, continues to be a disturbing and unsettling factor.

In western Canada labor disagreements in Alberta and southeastern British Columbia largely accounted for the great loss in production in this area. Unable to accept orders because they could not guarantee

Table I—Output of Coal by Canadian Mines in 1923 and 1924

	1923		Estimated Output—1924	
	Net Tons	Selling Value	Net Tons	Selling Value
Nova Scotia	6,597,838	$28,170,458	5,835,000	$25,044,000
New Brunswick	276,617	1,196,772	205,000	871,000
Saskatchewan	438,100	858,448	407,000	745,000
Alberta	6,854,397	28,018,303	4,525,000	17,458,000
British Columbia	2,823,306	13,813,520	2,111,000	10,167,000
Yukon	313	1,485	.....	.....
Canada:				
Anthracite	107	322	.....	.....
Bituminous	12,941,877	58,478,670	9,512,000	42,413,000
Sub-bituminous	466,492	1,399,424	559,000	1,676,000
Lignite	3,582,095	12,180,570	3,032,000	10,285,000
Total	16,990,571	72,058,986	13,103,000	54,285,000

delivery, the companies in this field continued to lose the markets they had built up, as consumers purchased supplies from available sources, and to meet the demand imported coal was carried into the Middle West. On the conclusion of the strike the men returned to the mines, but in a very short time sufficient coal was produced to supply the diminished markets and the mines were closed. Later a more favorable agreement was negotiated, and the companies, with this advantage of lower costs, set about recovering the markets lost during the spring and summer months. Vancouver Island collieries have been holding their own, but the costs of mining are high and markets none too plentiful at present quotations.

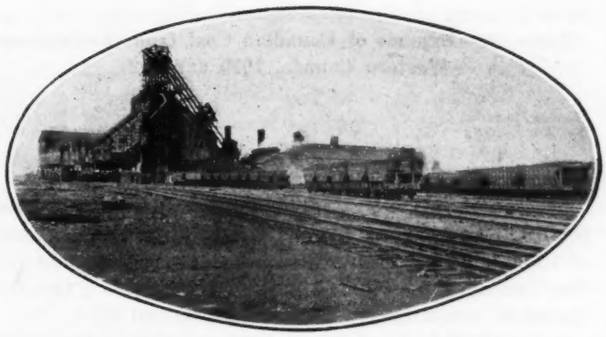


Fig. 1—A Large Colliery at Glace Bay, N. S.

Because of gaseous conditions underground, electric power transmission cannot be used underground as extensively as in many American operations. Compressed air is used instead. The building to the right of this picture contains several enormous air compressors.

IMPORTS SHOW BIG DECREASE

In spite of the fact that the production of coal in Canada was much lower in 1924 than in 1923, imports of foreign coal also showed a considerable decrease. Domestic supplies of anthracite, it is true, were only slightly less in volume than before, but the quantity of bituminous coal imported decreased five million tons. Industrial depression and the closure of many factories during the year reduced the apparent consumption of coal in Canada by about ten million tons from the amount used in 1923. The term "apparent" is used advisedly, as during 1923 stocks were built up and the tonnage of coal made available for consumption probably was considerably in excess of the quantity actually used. The consumption of coal ordinarily is estimated as the sum of production and imports, less exports. Imports of anthracite from the United Kingdom continued on the same scale as in 1923 but bituminous coal from this source fell off to about two-thirds of the amount brought in during the preceding year.

Exports of Canadian coal in 1924, following the declining trend in production, totaled less than a million tons, or less than half the tonnage cleared for export in 1923. The loss was fairly evenly divided between the mines in eastern Canada and those in the western provinces. During the year about 390,000 tons were exported from Nova Scotia and New Brunswick, as compared with 796,015 tons exported from these provinces in 1923. Alberta and British Columbia together marketed in the neighborhood of 400,000 tons of coal in foreign lands, compared with 858,391 net tons exported in 1923. Canadian coal was used in the United States, Newfoundland, the Netherlands and the United Kingdom in appreciable quantities, and was also sold to forty-odd other countries, but in comparatively small amounts. Exports from eastern and western Canada during the past two years are shown in Table II.

CONSUMPTION FALLS 9,000,000 NET TONS

The apparent consumption of coal in Canada in 1924 was 29,000,000 net tons as compared with 38,000,000 net tons in the preceding year. During the year Canada produced 13,000,000 tons, exported about 1,000,000

Table II—Imports of Coal into Eastern and Western Canada by Kinds and Grades, 1923-1924

(In Net Tons)

	Anthracite			Bituminous			
	Egg, Nut, Etc.	Dust	Total	Round and Run-of-Mine	Slack	Total	Total
Eastern Canada							
1923							
From United States	4,379,008	386,335	4,765,343	11,315,253	3,449,567	14,764,820	19,530,163
From United Kingdom	240,303	21,356	261,659	55,936	212,873	268,809	530,468
Total	4,619,311	407,191	5,027,002	11,371,189	3,662,440	15,033,629	20,060,631
1924							
From United States	3,559,658	222,742	3,782,400	7,651,577	2,851,176	10,502,753	14,285,153
From United Kingdom	273,433	1,844	275,277	18,969	21,134	40,103	315,380
Total	3,833,091	224,586	4,057,677	7,670,546	2,872,310	10,542,856	14,600,533
Western Canada							
1923							
From United States	130,998	9,881	140,879	*2,048,463	437,346	*2,485,809	*2,626,688
From United Kingdom	.....	.....	.....	1	.....	1	1
Total	130,998	9,881	140,879	*2,048,464	437,346	*2,485,810	*2,626,689
1924							
From United States	121,986	3,931	125,917	*1,666,051	434,284	*2,100,335	*2,226,252
From United Kingdom	.....	.....	.....	.....	.....	.....	.....
From other countries	.....	.....	.....	1,793	.....	1,793	1,793
Total	121,986	3,931	125,917	*1,667,844	434,284	*2,102,128	*2,228,045
Totals							
1923							
From United States	4,510,006	396,216	4,906,222	*13,363,716	3,886,913	*17,250,629	*22,156,851
From United Kingdom	240,303	21,356	261,659	55,937	212,873	268,810	530,469
Total	4,750,309	417,572	5,167,881	*13,419,653	4,099,786	*17,519,439	*22,687,320
* Includes 2,331 tons lignite.							
1924							
From United States	3,681,644	226,673	3,908,317	*9,317,628	3,285,460	*12,603,088	*16,511,405
From United Kingdom	273,433	1,844	275,277	18,969	21,134	40,103	315,380
From Other Countries	.....	.....	.....	1,793	.....	1,793	1,793
Total	3,955,077	228,517	4,183,594	*9,338,390	3,306,594	*12,644,984	16,828,578
* Includes 25,902 tons lignite.							

Table III—Exports of Canadian Coal from Eastern and Western Canada, 1923 and 1924

	1923	1924
Eastern Canada	796,015 tons	390,000 tons
Western Canada	858,391 tons	400,000 tons
Total	1,654,406 tons	790,000 tons

tons, imported about 17,000,000 tons. Comparative data for 1923 showed an output of 16,900,000 tons, exports of 1,600,000 tons, imports totaling 22,100,000 tons from the United Kingdom. About one-quarter of the total Canadian consumption is used by the railways.

Canada's five hundred coal mines afford employment to about 30,000 men, two-thirds of whom work underground. In 1923 underground men worked 241 days on the average, and surface men averaged 279 days. For all employees, the average employment was 250 days. Earnings per man-day in the same year were $5.57, and the total wages paid amounted to $42,321,990. Data on these points are not yet available for 1924, but employment during the first ten months of the year averaged 24,000 as compared with 30,300 in 1923. A corresponding reduction probably occurred in the other items mentioned.

Table IV—Average Imports of Coal into Central Canada by Principal Areas for the Five Years 1919-1923

(In Net Tons)

	Anthracite			Bituminous		
Destination	Egg, Nut, etc.	Dust	Total	Round and run-of-mine	Slack	Total
Quebec	107,722	16,713	124,435	168,775	50,910	219,685
Montreal	1,067,879	193,408	1,261,287	1,991,869	512,932	2,504,801
Ottawa	310,077	12,306	322,383	527,223	155,396	682,619
Kingston	133,479	994	134,473	74,744	90,019	164,763
Toronto	1,800,179	65,324	1,865,503	3,941,033	887,940	4,828,973
Windsor	338,214	6,107	344,321	2,056,132	443,497	2,499,629
Total	3,757,550	294,852	4,052,402	8,759,776	2,140,694	10,900,470

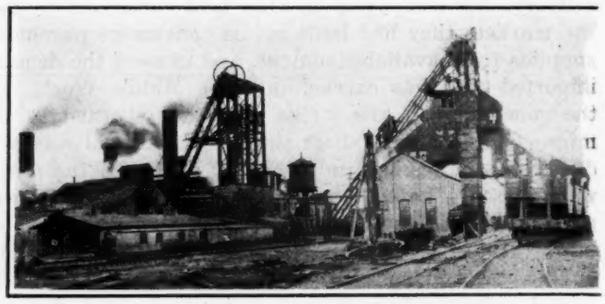


Fig. 2—Other Side of Installation Shown in Fig. 1

This is one of the largest and oldest plants of the Dominion Coal Co. Its workings are well below sea level. For many reasons the upperworks of many Canadian developments are far larger and more extensive than those commonly found at operations in the United States.

Of interest to producers in the United States is the fact that Canada's imports of coal find their destination for the most part in the industrial and more thickly populated areas of southern Ontario and southwestern Quebec, or between Windsor on the west and Montreal on the east. The average importations into the six main divisions of this area are shown in Table IV.

Discarded Tires Retard Coal Over Tipple Chutes

Long Chutes Caused Much Breakage — Old Tires Hanging Free in Chutes Retard Coal and Save Degradation

BY IVAN J. ELY

Chief of Construction, Cabin Creek Consolidated Coal Co., Kayford, W. Va.

ABOUT 18 months ago, the Cabin Creek Consolidated Coal Co., remodeled the tipple, incline and headhouse of its splint coal mine at United, W. Va. The old tipple and headhouse had been arranged so that the loaded cars could be lowered down a gravity plane. As rebuilt, monitors are employed to bring the coal down the hillside at the foot of which they discharge into a bin, whence the coal is taken to the tipple by a pan conveyor, 150 ft. long.

The old tipple had two immense slack bins, and as these were in good shape it was decided to utilize them for slack storage in the remodeled structure. To do this, and get the height necessary to use a gravity screen above them, it was necessary to pass the coal from the conveyor down a 10-ft. bar screen, reverse its direction of travel, and then slide it into a small bin. Thence the lump coal is drawn by a reciprocating feeder, passed over a rescreen and onto a loading boom. The general arrangement is shown on the accompanying drawing, as is also the means employed to retard the coal in the various chutes.

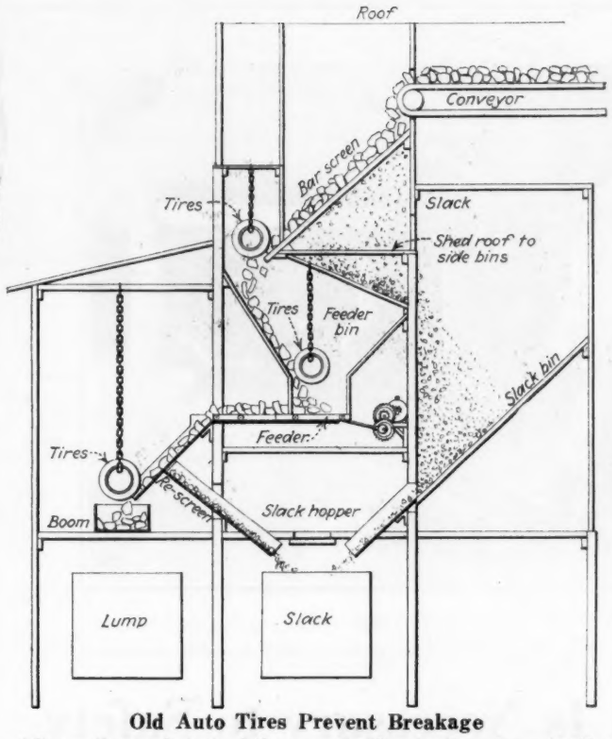
Soon after reopening the mine it was found that an excessive quantity of slack was passing over the rescreen. This seemed to show that much coal was being broken somewhere between the end of the conveyor and the rescreen. To avoid this breakage the pitch of the screens was changed but without success. A flat piece of sheet iron was placed at the end of the screen to retard the flow of coal and ease it down into the bin. This also failed to prevent breakage. In changing the pitch of the screens it was found that if the inclination was made such as to cause the coal to flow gently when it was dry, it would not move at all when it was wet.

Josiah Keely, the general manager of the company and myself spent several days trying to devise ways and means for stopping the needless breakage without actually altering the structure of the tipple. One evening, while driving home in my car and studying the matter, it occurred to me that the rubber tires on my machine absorbed the jolt of rocks in the roadway quite successfully. I began to wonder, therefore, why we could not utilize this same resiliency of rubber to ease the coal down the chutes.

I discussed the scheme with Mr. Keely, and he caught the idea at once, considering it worthy of a trial. The next morning he and I started for United in our cars. We drove slowly, and as often as we saw a discarded tire by the roadside, we picked it up. I might say that there are several hundred autos on upper Cabin Creek, which made the task of gathering these tires rather easy. By the time we reached United we had collected about sixty discarded tires, all of them in fair shape, as we had taken care to gather only those that had been thrown away because of some slight defect, such as a rim cut, or side blowout.

When the superintendent, Mr. Rose, saw the two carloads of tires he thought that we must have severed our connection with the company and gone into the junk business. We explained our intentions, and he immediately agreed to help us install the old tires reserving judgment as to results.

With the aid of the superintendent and the tipple



Old Auto Tires Prevent Breakage

After a thorough test of the use of old auto tires for retarding the speed of coal as it travels down the chute from the conveyor to the boom, the Cabin Creek Consolidated Coal & Coke Co. has concluded that it is more effective in a chute or over a screen than swinging doors would be. Several tipples of this company are thus using discarded automobile tires advantageously.

crew, we carried twenty of the old tires up into the tipple and by means of a small pole and some short lengths of chain, placed them at the lower end of the screen. We strung these tires on the pole and then suspended it with a chain on each end. We fastened the pole in such a manner that the bottom of the tires would almost but not quite touch the end of the bar screen. This arrangement allows small pieces of coal to pass under the old tires and drop freely into the small lump bin. As the large lumps leave the conveyor, and slide over the screen they attain a high rate of speed. At the lower end, instead of hitting a floor covered with sheet iron to reverse their direction of travel, they strike the tires. These latter yield a little (they are not on rims, and have no inflated tubes in them) and revolve upon the pole through a small arc sometimes as much as half their circumference.

Next we went down into the bin, where until then the coal in descending had landed on another pile of coal. Here we hung thirty more of the old tires on another pole, high enough above the floor to let small coal pass under them, but low enough to make it certain that all the large lumps would strike them, thus easing them down into the bin. Next we hung ten more tires at the end of the rescreen where the lump coal discharges into the loading boom.

After placing these tires in position we started the tipple machinery to see how they would work. We first watched the big lumps leaving the end of the conveyor slide across the screen and hit the tires. We were much gratified to see that these lumps did not break, also to note that the sharp corners on them were not being chipped off. We next went down to the slack car to see how much slack was coming from the rescreen. We found that its volume had dwindled from a steady stream to a mere dribble.

At the end of the month we checked up on the tonnage figures and found that we had saved about five per cent of the coal from going into the slack cars, thus effecting an appreciable saving, when the price of lump is compared with that of slack. We also noted quite a difference in the appearance of the lump cars after loading. Thus, chunks that formerly would have been broken into two or more pieces were now reaching the lump car of practically the same size as when they left the conveyor.

This article would hardly be complete without a word as to how the old casings "stand up" under the constant pounding of the coal. To date after five months we have had to replace only about six of these old shoes. We were afraid at first that the wear and tear on them would be rapid, but I wish that casings would "stand up" on my car as well as they do on the United tipple.

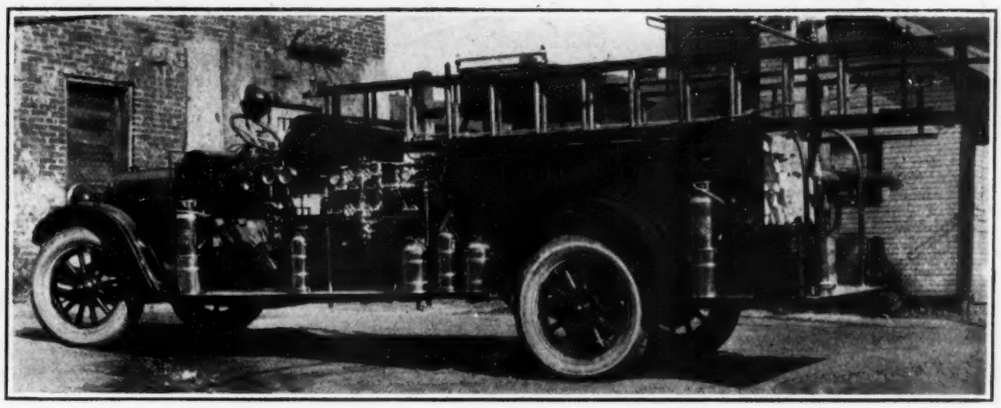
Ford Collieries Has Its Own Fire Engine

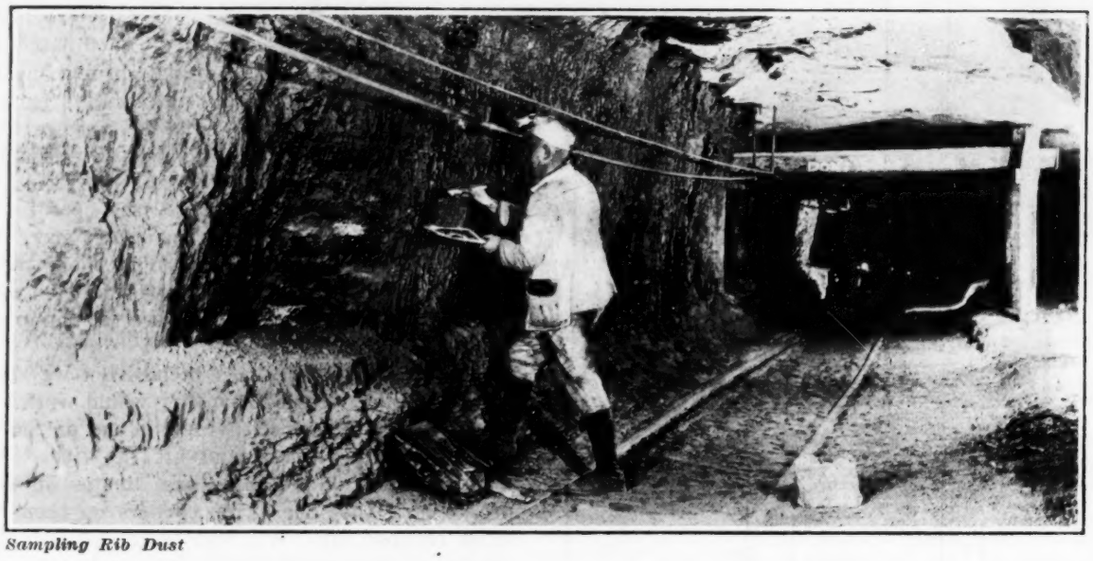
For a number of years the mining town of Curtisville, Pa., of the Ford Collieries Co., was free of fires but in 1923 several conflagrations occurred which threatened extensive property loss, but these were extinguished, fortunately without any great destruction. These experiences brought forcibly to the attention of the management the ever-existing fire hazard which threatens complete or partial destruction of a mining town and, as a result, it recently equipped the town of Curtisville with a fire engine mounted on a standard automobile chassis.

This fire-fighting unit consists of two 80-gal. chemical tanks; a rotary pump with a capacity of 350 gal. per minute against a head of 150 ft.; 1,000 ft. of hose and other equipment of a miscellaneous nature. The necessity for this safeguard is apparent.

All-Around Fire Wagon

This truck has chemicals, a rotary pump, hose, and ladders and so is prepared to afford all the paraphernalia except a hose tower for fighting a fire promptly and with success.





Sampling Rib Dust

Sampling of Rock Dust Is Necessary to Safety

Hit-and-Miss Methods Not Effective—Adobe Dust at Dawson Mines Tested Periodically—Paint Brush, Screen-Covered Dust Pan and Scoop Used—Accurate Records Kept

BY W. C. HOLMAN
Chief Engineer, Phelps Dodge Corp.,
Dawson, N. M.

ROCK DUSTING in coal mines is by no means a hit-and-miss business. If the inert dust that is disseminated is to be depended upon to "do its bit" for mine safety, it must be sampled and tested periodically. The relative proportion of coal dust to rock dust changes constantly. Consequently, accurate sampling and analytical determinations are essential for the proper maintenance of rock-dusted areas.

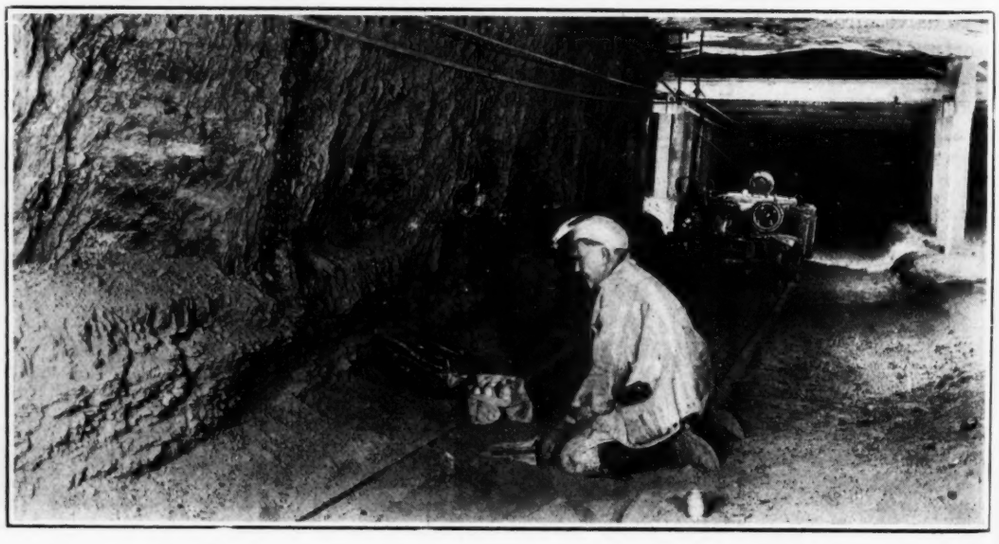
NOTE—Upon the accuracy with which a sample is taken depends the accuracy of the results, and in this case the results show either safety or danger. With a paint brush, dust is swept from the rib into a screen-covered dust pan, as shown in the headpiece. Material that passes the screen is placed in a friction-top can and sent to the laboratory for analysis.

At the mines of the Phelps Dodge Corporation, in Dawson, N. M., samples are taken every 60 days from the floor and ribs of all motor roads at intervals of 500 ft. The rib samples are taken from a section not less than 12 in. wide extending entirely up the rib for the full height of the entry. A 4-in. paint brush is used to collect rib dust in an ordinary dust pan the open top of which is covered with a 10-mesh screen. One of the accompanying illustrations shows how a man brushes the dust into the pan.

The manner of taking floor samples also is illustrated. This sample is taken from a strip running from

Sampling Mine Floor

Floor dust is scooped from a strip 12 in. wide extending entirely across the heading. The scoop employed is fitted with a screen top. Material passing this screen is quartered down to ¼ lb., placed in an airtight can and sent to the laboratory for analysis along with the rib sample.



Date 10/6/1924 **MINE DUST SAMPLES** By F.F.M.

SAMPLE NUMBER	SAMPLE KIND	MINE	LOCATION	DUST FROM	TOTAL WEIGHT	REMARKS
20	Std.	1	Motor Road 500 ft.	Floor	7#	Adobe Dust

PHELPS DODGE CORP.—STAG CAÑON BRANCH
MINE SAFETY DEPARTMENT
Dawson, N. M. DUST ANALYSES Date Oct. 10, 1924.

SAMPLE Number	SAMPLE Kind	MINE	LOCATION	Dust From	Total Weight	SCREEN TEST % OVER 40	SCREEN TEST % OVER 100	SCREEN TEST % UNDER 100	MOISTURE %	ASH %	REMARKS
20	Std.	I	Motor Road 500	Floor	7#	24%	25%	51%	0.7%	90.8 89.8 88.6	Adobe Dust

One Sampling Serves Sixty Days, with Sprinkling It Would Be Good For One Hour—Perhaps

The small form entitled, "Mine Dust Samples," is filled out by the man who takes the sample. The larger one is filled out in the laboratory and indicates the degree of protection that may be expected from the inert dust spread in the mine passages.

rib to rib and 12 in. wide. For convenience the scoop used is covered with a 10-mesh screen.

The entire rib sample is used for analysis. The floor sample is coned and quartered down to ¼ lb. The final products are placed in special tin containers fitted with friction tops. They are numbered and recorded on loose-leaf sheets and sent to the local chemical laboratory for analysis. The results are then tabulated on the form sheet, also shown, and filed.

The inert matter used for dusting in the Dawson mines is adobe. All motor roads are rigidly inspected and the adobe renewed at intervals as required, depending on the results disclosed by the periodical chemical tests.

Pittsburgh Coal Mining Institute Formed

A new coal mining institute has come into being. On the night of Jan. 17 about fifty coal mining men met in the auditorium of the Chamber of Commerce Building, Pittsburgh, Pa., and laid the foundation on which will be built the Pittsburgh Coal Mining Institute. The purpose of this new institute is to assist practical men to rise from the lower ranks to the position of mine superintendent.

At the first meeting the constitution and by-laws which had been drafted in advance were adopted after amendment, and the officers of the institute for 1925 were chosen. William McCoy, safety engineer for the Bertha Consumers Co., acted as temporary chairman at this meeting. The following are the officers chosen for this year: President, John I. Pratt; Vice Presidents, John F. Bell, Francis Feehan and W. N. Riggs; Board of Managers, J. P. McCune, John Bowles, James Adamson, J. C. H. Lubken, V. L. Henry, W. J. Ivill, William Phillips, James McGibbney, P. J. Callahan, Frank Pardo, S. C. Reynolds, Richard Maize, K. N. Maize, W. L. McCoy and Andrew Young.

Each member will be charged with yearly dues of one dollar. Any semblance of commercialism is barred from the meetings, which will be held four times a year. A manufacturer's representative will be allowed to speak about his equipment only when invited by the institute to do so. All meetings are to be held in Pittsburgh. An annual all-day meeting will be held either in December or January of each year. The minor meetings will be held at night.

The need for this new institute was voiced by John I. Pratt, who said that coal mining had become a science. Changes are being made in a wholesale manner, based on technical investigation as well as on the knowledge obtained from actual practice. College-trained men are bidding to take an active part in the management of mines, for which reason the practical man must study and keep up with the many advances being made in the industry. The members of this institute, suggested Mr. Pratt, will get out of it as much as they put into it. The time for the next meeting will be decided by the board of managers.

NOT THE JONES LOADER—In Vol. 27, page 67, in the headpiece was an illustration of a Myers-Whaley loader. Unfortunately this was described as a Jones loader in the footnote.

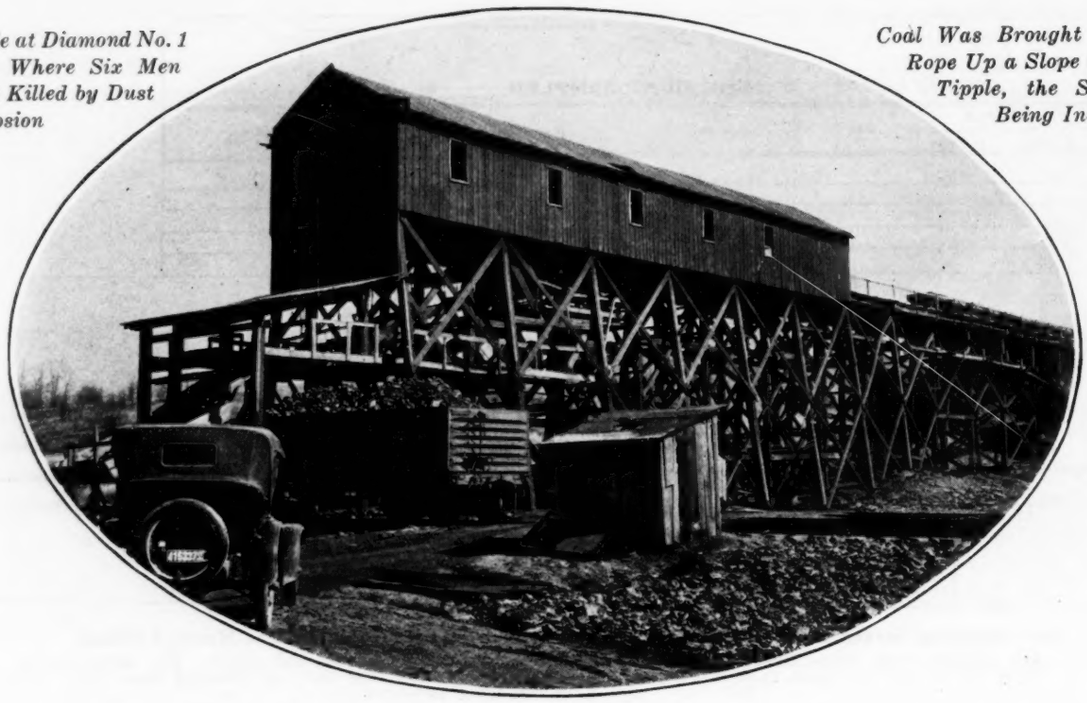
WEST VIRGINIA MINE ROCK-DUSTED—Mines Nos. 2 and 12 of the Boone County Coal Corporation, at Sharples, W. Va., are completely rock dusted. Several other companies in West Virginia are getting ready to follow suit. In view of the many disastrous explosions in every part of West Virginia, which shows that the mines of that state are little, if any, more safe from explosions than those of any other state, it is natural to expect that West Virginia will line up with the rest in the use of rock dust.

COAL AGE INDEX

THE INDEXES *to COAL AGE are furnished free to all who ask for them. The index for the last half of 1924 is now ready for distribution. A copy can be had by addressing a postcard to the subscription department of COAL AGE.*

Tipple at Diamond No. 1 Mine Where Six Men Were Killed by Dust Explosion

Coal Was Brought by a Rope Up a Slope to the Tipple, the Seam Being Inclined



Explosion in an Undusted Kentucky Coal Mine

Shots Cause Dust Explosion in Providence, Ky., Which Was Stopped by Water Pool—No Rock Dust Used in Damaged Mine — Seam Not Markedly Gaseous

SIX MEN WERE KILLED in the Diamond mine of the Diamond Coal Co., at Providence, Ky., on Jan. 15, probably the first dust explosion in the United States during the present winter season. It is to be hoped that with the energetic action to rock dust mines we shall better greatly the unwholesome record of last year's winter. That only a few men were in the mine at the time prevented any greater sacrifice of life. However, this circumstance was not fortuitous, the coal being shot when the regular work of loading was suspended. There were no evidences of gas. The mine had not been rock-dusted but a pool of water 200 ft. long on the main slope near the mouth of the panel stopped the spread of the explosion.

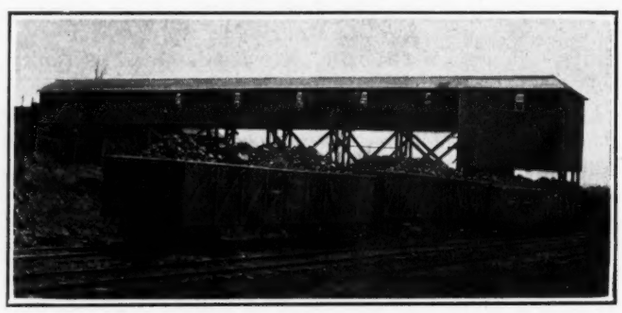
The panel in which the trouble occurred is one on the right and east of the main entry, about 600 ft. inby the airshaft. Shotfirers were shooting the panel at about 4:45 p.m. when two of the shots planted in the entry face and one in the air course all blew out approximately at the same moment. This started a dust explosion that swept the whole panel. The flame traveled from the panel entry into the main slope. The direction of travel naturally was toward the outside, but immediately in the flame's path lay the pool of water. This put out the fire. There was no force of the blast in the other direction on the main slope because the main entry had been driven only about 500 ft. beyond the panel and the air cushion in this dead end was so effective that evidences of fire were not found in more than 100 ft. of the passage.

Although many operators in western Kentucky have talked of rock dusting their properties, the only one to do anything about it thus far is the West Kentucky Coal Co., which has dusted several miles of workings and expects to cover every dry mine in its long string. The Diamond explosion was in No. 9 coal, which has now proved its potency for ill even though hitherto it has not exhibited its capacity for such mischief.

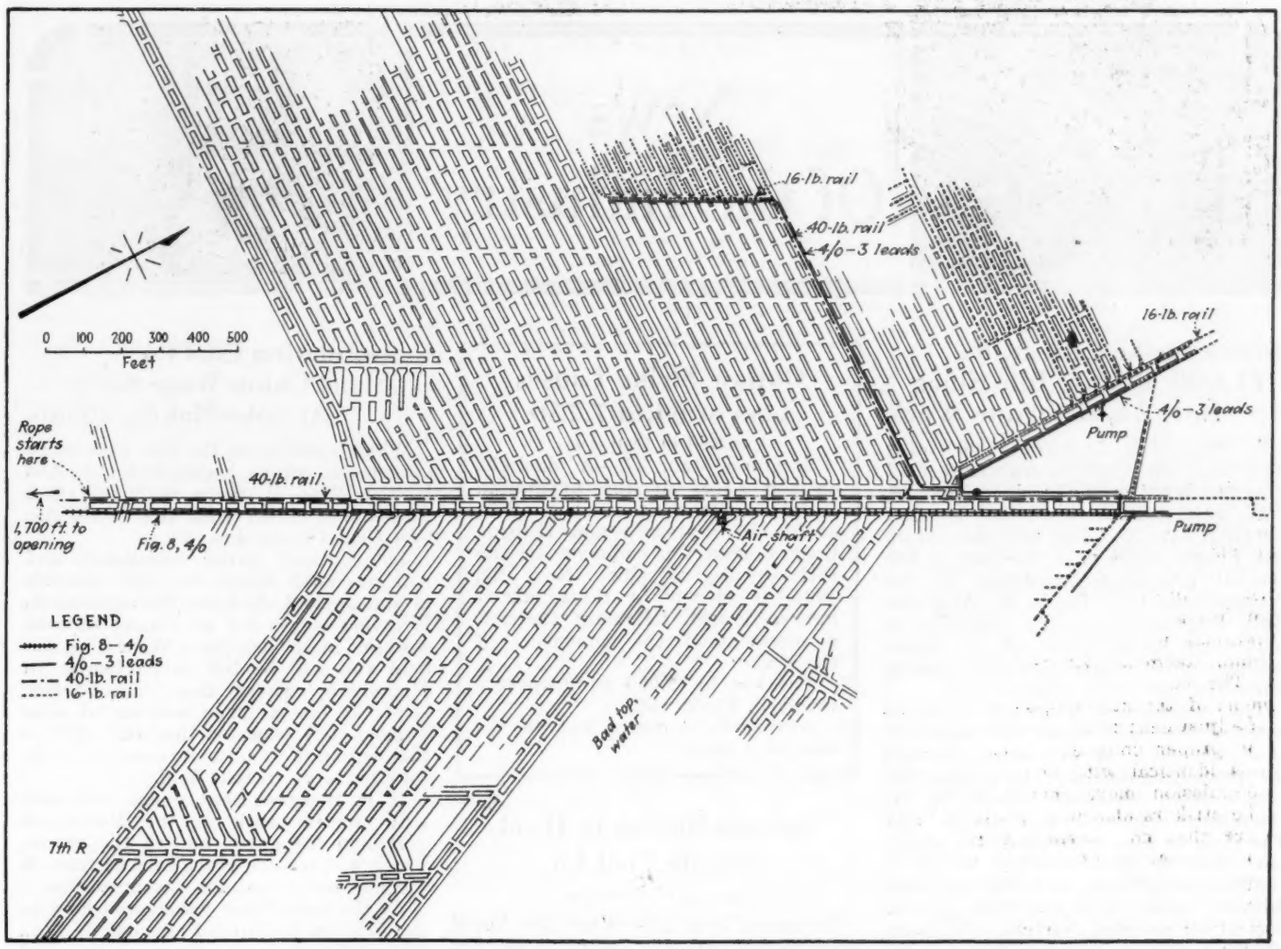
THREE SLOPES OPEN PROPERTY

The Diamond mine has been producing something less than its potential production of about 700 tons a day. The property is opened by three slopes with tipple at the portals of No. 1 and No. 2 slopes. Slope No. 3 was sunk during the war and has no tipple. When this slope was working coal from it was hauled about 500 ft. to No. 1 tipple for screening over simple shaker screens making three sizes of coal. All three slopes are connected by cross entries within a few hundred feet of the portals.

The coal seam worked by means of these three slopes



Tipple, Providence No. 2 Mine, Diamond Coal Co.
This mine is nearby Mine No. 1 and loads on the same side track. It was unaffected by the explosion.



No. 1 Mine, Diamond Coal Co., Providence, Ky., Where Explosion Occurred

The rail and the trolley wire in the main heading are shown on separate passageways. That is evidently only for the purpose of keeping the two symbols apart. Only that part of the main roadway served by the locomotives is shown in the figure. The coal is hauled by rope to the tipple from the locomotive terminal on the left.

—the No. 9 Kentucky seam—is not particularly gaseous and lies on a pitch averaging about 3 per cent in the Diamond mines, running across the three more or less parallel slopes. Thus the No. 3 slope and its connected workings lie somewhat higher than those of the old No. 1 slope, in the middle of the property. Side entries from the main slope driven on the raise could, of course, accumulate deposits of gas if ventilation were defective. However, the mine's air system has been recognized as reasonably good. An air shaft approximately 160 ft. deep sunk to the main slope about a mile from the portal is equipped with a motor-driven fan of ample size.

The coal in the Diamond mines ranges in thickness from 4 ft. 6 in. to 4 ft. 8 in. The output in 1923 through No. 1 slope was 45,000 tons; from No. 2 slope, 26,000 tons, and from No. 3 slope, 10,000 tons. Gathering is by mules. Two overpowered electric motors haul the coal on the main entries up the No. 1 slope to a point about 2,000 ft. from the portal. From there up the heavier grade of the slope rope haulage is used.

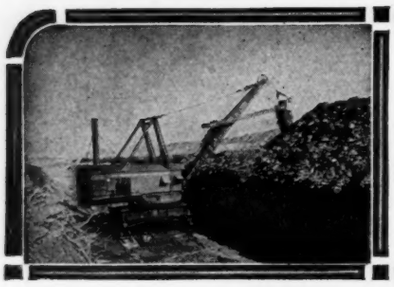
Compressed Carbon Dioxide as Aid in Fighting Sealed Mine Fires*

The use of inert gas in fighting mine fires is still a controversial subject among mining men, although practical results obtained by simple sealing, by flue gases, and by carbon dioxide leave no doubt as to their value when employed under the right conditions.

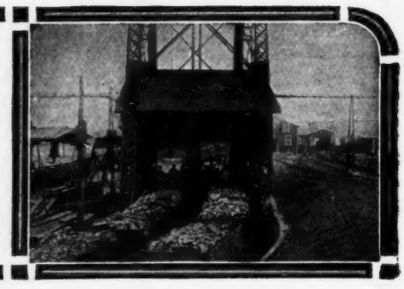
Many unknown variables work against the fireman in applying any kind of fire extinguishing agent, even water, to any mine fire. It is therefore not surprising that all fire extinguishing agents, including water, have a somewhat spotty record in connection with mine fires.

The necessity for using inert gas in fighting mine fires is entirely a question of leakage. When a fire is sealed off, there is always some leakage, and thermal contraction of the atmosphere as the fire cools, together with barometric and thermometric fluctuations, tend to cause more or less air to leak in and feed the fire. When the leakage is small, the heat generated by inleaking air will be less than that dissipated by radiation, conduction, and convection, and the fire will smother itself. When the leakage is more considerable, it can be offset most economically by introducing liquefied carbon dioxide at a controlled rate into the fire zone. When the leakage becomes so great as to warrant the expense of installing a special furnace and cooling means for making flue gases on the ground, flue gas can be used more economically. The choice of methods depends on local conditions.

*Charles L. Jones, Mellon Institute of Industrial Research, Pittsburgh, Pa., in *Quarterly* of National Fire Protection Association.



News Of the Industry



Outlaw Strike Called Off; 11,000 Miners, Idle Since Nov. 24, Return to Work

Scranton, Jan. 27.—The 11,000 mine workers in the Pittston anthracite field who had been on strike since Nov. 24, 1924, returned to work on Monday morning, Jan. 26. This was decided on last Friday night at a meeting of the general grievance committee of the Pennsylvania Coal Co. in St. Aloysius' Hall, Pittston, when the report of a conference by members of the International union commission and general committeemen was read.

The commission proposed a settlement of the strike upon the assurance of adjustment of all grievances through the proper channels. The proposition was identical with one offered by the commission more than a month ago. The strikers also were given the assurance that no discrimination would be shown against them and that the commission would recommend the restoration of all revoked charters. Ten local unions lost their charters through the strike.

In the adjustment of grievances, it was announced, all differences will first go before the company officials, district officers and colliery grievance committees for settlement. If any further difficulty arises in the settlement the grievances will be taken before the district conciliation board with the three district presidents present. The Anthracite Conciliation Board will be the last step in settling the differences.

West Kentucky Practically All Non-Union Now

A report from Greenville, Ky., on Jan. 21, stated that twenty-two of the twenty-eight commercial mining companies in Muhlenberg County, the union stronghold in western Kentucky, were operating one or more of their mines, a number of concerns which have several mines operating only one opening. The Gibraltar Coal Co. is working three of five openings, while W. G. Duncan & Sons are operating at Luzerne, but making no effort at Graham. The Black Diamond Coal Co. is working but one opening. Miners are returning to work on the 1917 wage scale, however, and it is asserted that some companies have 70 to 75 per cent of their forces back at work. Wes Ames, president of the district union, was quoted at Owensboro, Ky., on the same day as stating that only 2 per cent of the men that went on strike had returned to work in Muhlenburg County, he holding that of 7,800 men who went out, 7,500 were still out.

Outlaw Strike Causes Loss of $4,667,750

Special to Coal Age

Scranton, Jan. 27.—A sidelight on the effect of the anthracite outlaw strike, which was in effect at ten Pennsylvania and Hillside Coal & Iron Co. collieries in the Pittston region since Nov. 24, 1924, is shown in these official figures issued following the announcement of the conclusion of the strike:

Pay lost to 11,000 mine workers involved, $3,827,750.

Anthracite tonnage lost to the market, 850,000.

Seward Button to Head Temple Coal Co.

Special to Coal Age

Scranton, Jan. 27.—When the board of directors of the Temple Coal Co. meet next month, Frank H. Hemelright, the president, is expected to retire as head of the company and Seward E. Button, of Wyoming, vice-president and general manager of the company, will succeed him. Mr. Hemelright, who for years has been prominent in the anthracite industry, will leave for the South about March 1 with his family, where he will remain for some time. Mr. Button, who also is among the foremost men in the industry, was formerly chief of the state Bureau of Mines.

Mr. Hemelright was born in Noxen. In his early youth his parents moved to Luzerne, where he commenced his mining career as a breaker boy at the Haddock mines. He later moved to Lackawanna County, where he obtained a position with the Simpson & Watkins company as a brakeman on a colliery locomotive. The Simpson & Watkins collieries were later absorbed by the Temple Coal Co., organized by the late J. Pierpont Morgan.

Mr. Hemelright's rise with the new company was rapid. From outside foreman he was promoted to superintendent. From this position he became general superintendent and later general manager and vice-president. Several years ago Mr. Hemelright was named president of the company.

The advancement of Mr. Hemelright in the Temple company was recognized by other coal companies and he was named on the board of directors of the Glen Alden Coal Co. Mr. Hemelright also was interested in the Reynolds syndicate which purchased the Lehigh & Wilkes-Barre Coal Co.

Consolidation Coal Co. Signs Union Wage Scale At Coke-Making Plants

What is said to be the first coke wage agreement ever negotiated by the United Mine Workers in the United States was closed with the Consolidation Coal Co. on Jan. 17.

The contract starts immediately and will run until March 31, 1927, the life of the present Jacksonville agreement. It covers wages for all classes of coke workers in the northern West Virginia field and will be felt in particular in Monongah, where the Consolidation Coal Co. has a large number of coke ovens. It is expected that this will be the beginning of an enlargement of the coke industry in that field.

It is reported that about 600 men will receive work at the Monongah ovens, in the yards and in the mines, which will resume operations to furnish the necessary coal for carbonization.

At the conference which was held in the Watson Building, Fairmont, W. Va., where the general offices of the coal company are located, the concern was represented by C. H. Tarleton, general manager of the West Virginia, district; D. A. Reed, assistant general manager of the West Virginia district, and H. E. Peters, acting labor commissioner of the Northern West Virginia Coal Operators' Association. The union was represented by Van A. Bittner, chief representative in northern West Virginia; James McCleary, William Feeney, of Brownsville; James L. Studdard, and C. Fremont Davis, International representatives.

Cost of Railroad Fuels Lower In November

Reports of Class I railroads to the Interstate Commerce Commission tabulated by the Bureau of Coal Economics of the National Coal Association show that during November the average cost per net ton of coal used by these railroads in locomotives in transportation train service was $2.83 per net ton. In the Eastern district the average cost was $2.87; in the Southern district, $2.36; in the Western district, $3.10. In computing this average cost of coal any freight charges paid on it by the consuming railroad are added to the invoice price of the cost at the mine. Compared with the month of October, 1924, these averages show a decrease of 3c. per net ton in the Eastern district; an increase of 3c. in the Southern district; a decrease of 5c. in the Western district, and a decrease of 3c. per ton for the United States as a whole.

Great Progress Made by Coal Industry In Northeastern Kentucky Last Year; Shipping of Unbilled Coal Frowned On

Despite the distressing fact that, as expressed by one speaker, "Many of the operators did not learn that they could sell their product instead of giving it away," the members of the Northeast Kentucky Coal Association had reasons for rejoicing at their annual meeting and banquet, held Jan. 22 at Ashland, Ky. Output in the district in 1924 was 8,512,308 tons, an increase of nearly 20 per cent over 1923, which year in turn had been higher than any preceding. Approximately 450,000 tons was shipped to tidewater, this being the first year that rates were such as to make it possible for eastern Kentucky coal to reach this market. During the year favorable rate adjustments were made to various points which are conservatively estimated at a saving of 25c. per ton.

Improvements put into effect by the Chesapeake & Ohio Ry. made it possible for the Big Sandy division, which serves the northeast Kentucky district, to handle 750 to 800 cars per day as compared with a limit of 450 cars three years ago. Assurance was given that, as soon as needed, the division would be equipped to handle 1,500 cars per day. In 1924 the active mines in the district were reduced to 173, as compared with 184 in 1923. Of the 173 active mines, 143 were operated in 1924. The period of readjustment seems to be about over.

Unsold Coal Shipments

The great harm to the operators of coal being shipped unsold was discussed at length. A representative of the Smokeless Operators' Association stated that during the previous week practically all of those operators individually signified their intention not to ship in the future any coal which has not been sold. Members of the Northeast Kentucky Association were urged not to ship a single car of coal away from the tipples until an order stating the price had been received from a reliable party.

At the banquet held in the evening many men prominently connected with the coal industry were present. Almost the entire official family of the Chesapeake & Ohio Ry. were represented, including President W. J. Harahan and Vice-Presidents Wall, Begien and Whittaker. Each of these officials gave short talks touching on the dependency upon one another of the railroads and the industries that they serve.

Rigid State Inspection

Professor Norwood, head of the mining department of the University of Kentucky, reviewed the growth of the industry and of the development of the mining law of the state, beginning with 1884, when he was made the chief of the newly created Mine Department. At that time artificial ventilation was unknown in Kentucky, and it was not until 1888 that a law was passed providing for it. He stated that if the miners of 1884 had been privileged to enjoy one-half of the safety measures and comforts of the present day they would have considered themselves in Heaven. He, however, emphasized the need for further efforts toward making the state Mine Department more useful to the industry and suggested that this could be brought about by the operators demanding for their own protection a more rigid inspection of the mines, which can be made possible only by hiring more inspectors.

Gandy Sets Forth Facts

Harry L. Gandy, executive secretary of the National Coal Association, was the principal speaker of the evening. He submitted figures taken from the last census exploding the idea so popular among the "lifters" of the non-mining sections that many children are slaving their lives away in the coal mines of the United States. He also explained some of the details of the twentieth amendment often omitted in the newspapers that sponsor its ratification. His enumeration of the great number of government bureaus which now have a connection with coal mining emphasized the need for the operators to make a more concentrated effort to get the truth before the great mass of people and thus counteract the present bureaucratic tendencies. He dwelt at length on the dampening effect of the flood of crude oil to the bituminous markets but pointed to many recent instances of our great industries returning to the use of coal.

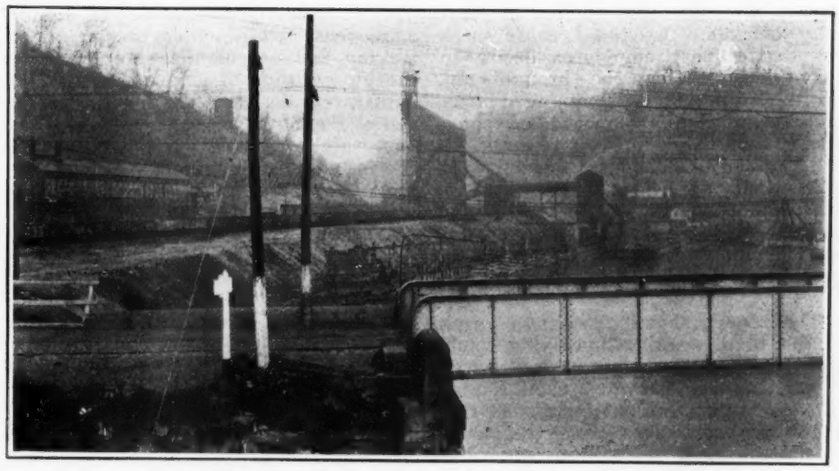
Among others who made addresses were S. M. Andrews, vice-president of the Consolidation Coal Co.; John A. Morris, of the American Railway Association, and D. J. Parker, of the U. S. Bureau of Mines, Pittsburgh, Pa. Mr. Parker assured the operators that there was absolutely no intention on the part of the personnel of the Bureau of Mines to favor legislation forcing regulations opposed by the majority of the mines.

Officers of the association for the ensuing year are: President, Cadwalader Jones, of the By-Product Coal Co., Wheelwright, Ky.; First Vice-President, J. J. Fluck, of the Elkhorn Piney Coal Mining Co., Weeksbury; Second Vice-President, C. H. Beidenmiller, of the Glogora Coal Co., Huntington, W. Va., and Treasurer, N. M. White, of the Colonial Coal & Coke Co., Prestonsburg. The above men, together with James Salisbury, of the Blue Beaver Elkhorn Fuel Co., Prestonsburg, and Henry Laviers, of the Northeast Coal Co., Paintsville, make up the new executive committee.

Will This Save Miners' Pay?

Following up his idea that a scientific survey might determine new uses for more Illinois coal and possibly stave off a wage cut to miners, Frank Farrington, president of District 12, United Mine Workers, has asked Governor Pinchot of Pennsylvania to grant a furlough to O. M. Rau, of the Pennsylvania power survey, to make an Illinois study. Mr. Farrington is pursuing the giant power idea in the hope it might be a factor in increasing running time of Illinois mines—and working time of miners. He has repeatedly told his rank and file that something must be done to give Illinois coal a better market at a fair price against its non-union competitors. He is struggling to find that something, so that no cut in miners' wages will be necessary.

The Pennsylvania executive has acceded to Mr. Farrington's request and the Illinois branch of the union will pay the incidental expense of the survey.



Harmarville Mine Tipple on Artificial River Harbor

This mine is owned by the Consumers Mining Co., a subsidiary of the Wheeling Steel Corporation. The tipple is located about 600 ft. inland from the Allegheny River at a point 15 miles northeast of Pittsburgh, Pa. A mine-plant site on the bank of this river was not available; therefore, to take advantage of the river route by way of the Ohio River to Wheeling, W. Va., where the steel company has a number of mills, it was necessary to dredge a harbor. This artificially formed arm of the river is spanned by two bridges, one for railway and automobile traffic and the other for a line of the Pennsylvania R.R. Normally this mine produces 3,000 to 4,000 tons daily, only part of which is shipped by water.

Workers' Representation At Rockefeller Mines Only Partial Success

The Rockefeller plan of employees' representation, which was introduced in the mines of the Colorado Fuel & Iron Co. immediately following the strike of 1913 and which has since been adopted in numerous other plants, has proved to be only a partial success, according to a preliminary report made public Jan. 26 by the Russell Sage Foundation, which since 1919 has been studying the operation of this and other plans for giving wage earners a share in the management of industry. The full report, covering 500 printed pages, will be issued within the next month.

In making the report public, Mary Van Kleeck, director of the Foundation's department of industrial studies, said it has a three-fold significance for industry generally and for the country at large; it reveals the underlying causes of the perennial controversy between coal miners and mine operators; it is the first impartial appraisal of the most prominent experiment in employees' representation—an experiment which was the forerunner of the shop committees, works councils, and similar projects introduced in about a thousand companies within recent years in an effort to solve labor difficulties; it points the way to a termination of the conflict between the employers interested in employees' representation plans and organized labor, which has thus far bitterly opposed such plans in the belief that they set up "company unions" designed to replace labor unions.

The Industrial Representation Plan was developed by W. L. Mackenzie King, now Premier of Canada, at the request of John D. Rockefeller, Jr., and was introduced at the mines of the company by Mr. Rockefeller. At each mine two or more representatives are elected by the employees to serve for one year. These representatives from all branches of the company meet periodically with an equal number of company officials. At these conferences any matter that employees desire to have discussed can be brought up. There also are in each mining district joint committees composed of equal numbers of employees' representatives and company officials to consider: (1) safety and accidents; (2) sanitation, health and housing; (3) recreation and education; (4) industrial co-operation and conciliation.

Living Conditions Improved

The report shows that as a result of this plan, working and living conditions are more wholesome and happy for the miners and their families, but that the miners are not satisfied that their representatives have the power to protect them in decisions regarding wages and other conditions of work.

"Employees' representation, as practiced in the mines of this company," Miss Van Kleeck said, "works a revolution in remedying the outstanding grievances of an earlier decade, but—limited as it is to conference, concerned primarily with adjustment of grievances, and failing to take cognizance of organized labor—it does not develop leadership or stimulate interest among the wage earners. The lesson for industry generally in the experience of this company is that giving workmen a voice in the management of industry is decidedly a step toward permanent industrial peace and efficiency, but the measure of success to be attained by an employees' representation plan depends on the sincerity and intelligence with which the plan is carried out by foremen, superintendents and higher administrative officials."

Defects of Plan Pointed Out

The report points out that at the Colorado Fuel & Iron Co. the employees' representatives are men who work in the mines and who do not feel free to act in opposition to the company's interest in defense of fellow employees; that employees are not making full use of the plan even for the presentation of grievances; that in actual practice the employees' representatives have no share in decisions concerning reported grievances; that the issue of trade unionism versus employees' representation is kept constantly alive by the company's refusal to permit union meetings in any building in the camps owned by the company, by other frequent instances of antagonism to unions and by the company's policy of accepting the wage scale of its competitors which has actually been set by unionized companies through negotiation with the United Mine Workers, while refusing to deal in any way with the miners' union.

The report credits the company with a more liberal attitude toward unionism since the employees' representation plan was introduced, but adds that a conflict is in existence in Colorado between employees' representation and trade unionism, which must be dealt with before any plan can be made to work satisfactorily.

Railroads Use 28 per Cent Of All Soft Coal

More than 500,000 workers are wholly supported by railroads, even though they are not actually on the payrolls, President Crowley of the New York Central Lines told members of the Pittsburgh Traffic Club in an address Jan. 22.

Mr. Crowley spoke on "The Railroad Dollar and Where It Goes," asserting that the $6,000,000,000 the railroads received in 1923, and a lesser sum in 1924, "hesitated in the treasuries of the carriers hardly long enough to be counted before they hurried out again to help turn the wheels of industry."

The railroads, he said, consumed 30 per cent of the entire output of steel, paid nearly 48 per cent of the total operating revenues to employees, used 28 per cent of all the soft coal mined and 25 per cent of the lumber output.

Indiana Struggles Against Non-Union Competition

Figures in the office of the Indiana Coal Trade Bureau show that 4,019,601 tons of non-union coal was used during the first nine months in the State of Indiana, not including that used in the Calumet district about Gary, Whiting and Indiana Harbor, in the Chicago territory. It is believed the non-union coal used in the Calumet district during that period amounts to at least 2,000,000 tons, making a total of approximately 6,000,000 tons during the first nine months of 1924.

Figures for the last three months of the past year have not been compiled at the Bureau, but, due to the fact that the last three months are the heaviest of the year, it is probable that figures on these months would amount to much more than one-third of the total used during the first nine months.

Indianapolis is said to be a "hot bed" for non-union coal, especially Kentucky coal, it being possible to place Kentucky coal on the market in Indianapolis at a lower price than Indiana coal can be marketed there. Little non-union coal gets into Terre Haute, however, because of the proximity of Indiana mines.

Seeks Data on Interaction Between Oil and Coal

"Advisers of the Federal Oil Conservation Board," according to Dr. George Otis Smith, Director of the Geological Survey, "are fully cognizant of the interaction between oil and coal in the fuel market and of what is believed to be the bad effect on both industries already. The board had this in mind in framing the following question in a letter addressed to the oil industry: 'Is oil being produced and used as fuel that could and should be replaced by coal?' This fact is appreciated by a few of the oil men but not by a sufficient number of them."

Foe of Nationalization in Britain to Speak Here

Philip Gee, Director of Information Service of the British Colliery Owners' Association, will address the annual convention of the National Coal Association, according to statement of President S. Pemberton Hutchinson. Mr. Gee led the recent fight against the nationalization of mines and his intimacy with the coal industry and the political problems of Great Britain insures an interesting discussion.

The following committee to decide the date, place and program of the 1925 convention has been appointed by President Hutchinson: Ezra Van Horn, general manager, Clarkson Coal Mining Co., Cleveland, Ohio (chairman); T. B. Davis, president, Island Creek Coal Co., New York City; Marshall J. H. Jones, vice-president, Bertha-Consumers Co., Pittsburgh, Pa.; R. C. Tway, president, R. C. Tway Coal Co., Louisville, Ky.; Hugh Shirkie, president, Shirkie Coal Co., Terre Haute, Ind., and Holly Stover, president, Stover Coal Co., Chicago, Ill.

Industrial Disputes Act Unconstitutional

A decision of great significance to Canadian industries has been rendered by the Imperial Privy Council, which has declared the Industrial Disputes Investigation Act (generally known as the Lemieux Act) to be unconstitutional, on the ground that questions relating to property and civil rights fall within the scope of provincial jurisdiction. The Industrial Disputes Act, passed in 1907, provides for the appointment of Boards of Conciliation with the object of avoiding strikes or lockouts and has been frequently resorted to in disputes between coal operators and miners.

What action the federal government will take in the matter is so far undetermined. James Murdock, Minister of Labor, stated that in the meantime the department would proceed with the organization of the Board of Conciliation established to investigate the dispute between the British Empire Steel Corporation and the Nova Scotia coal miners. When the representatives of the disputing parties had nominated a chairman, he said, the Board would sit.

Dr. James W. Robertson, of Ottawa, has been named as the employees' representative on the Board of Arbitration and the companies' representative is W. E. Thompson, barrister, of Halifax. These two representatives will select a third, or, failing in their selection, the department will do so.

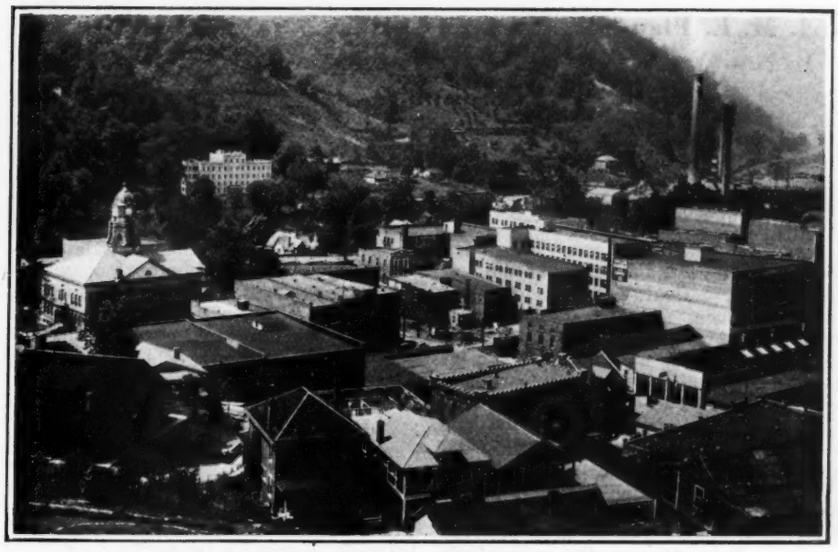
The existing agreement between the companies and their employees expired Jan. 15. Negotiations for the formulation of a new agreement were begun on Dec. 11, and by Dec. 31 an agreement had been reached on all points but that of wages. The companies seek a 10 per cent reduction and the men want a 10 per cent increase. About 11,000 men are involved in the dispute.

Dr. Robertson is well known as an investigator of labor disputes, and headed the commission named two years ago to inquire into conditions at Sydney and Glace Bay.

Desserts

Students and instructors at Brookwood Labor College, Katonah, N. Y., have agreed to abstain from dessert for three weeks and will send the money thus saved by the college commissary to the secretary-treasurer of District 17 of the United Mine Workers, Charleston, W. Va.

About 20,000 persons, evicted union members and their families, are reported to be living in tents and shacks on the windswept hills of West Virginia. The union is providing shelter and rations enough for existence. The contribution of the Labor College is in response to an urgent appeal for clothing. In addition to money, two large boxes of clothing were sent to West Virginia last week from the Labor College.



Airplane View of Logan, W. Va.

The three smokestacks at the right are on the power plant of the Kentucky-West Virginia Power Co. The Logan plant is now tied in with several others in the southern West Virginia and eastern Kentucky coal fields. About 18,000 kw. of the present peak load, which was 30,000 kw. in 1924, goes to mines in the Logan field, the rest going to adjoining fields. The Island Creek Coal Co., the biggest producer in the Logan field, gets its power from this plant through a central metering point, its present 5-minute demand running in excess of 4,000 kw.

Needed Coal Laws Outlined By Governor Morgan

A forecast of legislation which is desired to make the mining industry more efficient and to reduce the hazards of mining is contained in the biennial message of Governor E. F. Morgan to the Legislature of West Virginia on Jan. 14. In his message Governor Morgan said:

"During the fiscal year closing on June 30, 1924, West Virginia mines produced their greatest tonnage in any single year. In the fiscal year 1923 the total production was 97,000,000 tons. This increased in 1924 to approximately 103,000,000 tons.

"The increased production conveys fairly well the importance of this industry to our state, when it is considered that more than 115,000 persons are engaged therein. Yet the most important suggestion that will come to you at this session will be with reference to the enactment of measures designed to save human life, or to reduce the fatal and non-fatal accidents in our mines to a minimum. The widespread loss of life in our mines is a subject that has engrossed the attention of the President of the United States. I am advised that he will call in the near future a conference to consider this very important phase of one of our largest basic industries.

"We have sought in West Virginia to keep the number of fatalities in the mining industry at a minimum. Our record has been exceptionally good until the past year, when three explosions added the names of 270 victims to the list of fatalities. Except for these three explosions our record would have excelled, even with the increased production, that of the preceding year.

"Because of the growth of the mining industry in our state it is impossible for the present force of district inspectors to comply with the mining law requiring inspections at certain intervals. The department will ask for additional district inspectors and for the appointment of sectional safety inspectors, whose duty it would be to make the individual workman realize that a majority of the fatalities could be avoided with reasonable precaution. The importance of this step cannot be minimized when we consider that more than 60 per cent of our accidents are the result of carelessness and are preventable.

"There was enacted by the Legislature of 1923 a bill creating a school of mines. In compliance with that legislation, I appointed a committee vested with authority to recommend to the present legislature the location of such school. This commission will make a report at the present initial session."

Coal Companies Lend Aid in Protecting Forests

A report made at the annual meeting of the Anthracite Forest Protective Association held in Hazleton, Pa., recently, showed unprecedented co-operation by coal companies in the protection of forest lands owned by them and others.

According to the report, the Hazle Brook Co. is maintaining spark screens and safety strips at all its operations.

The Lehigh Valley Coal Co. burned eight and one-half miles of safety strips and an additional nine and three-quarters miles of back lines has been cut preparatory to burning more strips. Several spark combusters have been installed on locomotives and thirteen collieries have forest fire fighting corps.

The Lehigh Coal & Navigation Co., Madeira, Hill & Co., Hudson Coal Co., Kingston Coal Co., Girard Estate, Philadelphia & Reading and Lehigh Valley railroads are among those mentioned in connection with special activities for protection of the forests.

A. I. M. E. Plans Big Meeting In New York, Feb. 16-19

An interesting and varied program has been announced, tentatively, for the 131st meeting of the American Institute of Mining and Metallurgical Engineers, to be held Feb. 16-19, in the Engineering Societies Building, New York City.

Separate sessions have been arranged for the consideration of the following topics: Coal; ground movement and subsidence; non-metallic minerals; iron and steel; petroleum; mining methods; milling, and industrial relations. The annual business meeting is scheduled for Tuesday morning, Feb. 17, when the officers of the Institute will submit their reports for 1924, and officers for 1925 will be elected.

Unusual arrangements for entertainment have been made, which includes the annual smoker, to be held Monday evening, Feb. 16, at the new Cafe Savarin with professional entertainers, and an informal dance the following evening at Institute headquarters. The annual dinner and reception will take place Wednesday evening, Feb. 17, at the Waldorf-Astoria. On Thursday an excursion of exceptional interest will be made on a special train to Lakehurst, N. J., to inspect the Naval Air Station at which the dirigibles, the Shenandoah and the Los Angeles (originally known as the ZR3), are quartered.

Among the papers to be presented at the meeting are the following:

Symposium on the Origin and Composition of Coal

Monday, 9:30 a.m.

"Environmental Conditions of Deposition of Coal," by David White, D. S., chairman, Division of Geology and Geography, National Research Council, Washington, D. C.

"The Physical Constitution of Coals: Part A—The Ingredient Material of Coals and the Composition of the Deposits at Close of Process (biochemical) of Sedimentation. Part B—The Microscopical Constitution of Coals of Different Ranks and Ages," by Reinhardt Thiessen.

"Coal in Relation to Coke," by E. C. Jeffrey, Botanical Laboratories of Harvard University, Cambridge, Mass.

"Miscroscopical Structure of Anthracite," by Homer G. Turner, assistant professor of geology, Lehigh University, Bethlehem, Pa.

Ground Movement and Subsidence

"Factors Affecting Bank Slopes in Steam-Shovel Operations," by Louis S. Cates, vice-president and general manager, Utah Copper Co., Salt Lake City, Utah.

"Mine Support and Mine Subsidence in the Birmingham District," by W. R. Crane, superintendent, Southern Mining Experiment Station, Birmingham, Ala.

"Rock Bursts and Bumps," by George S. Rice, chief mining engineer, Bureau of Mines, Washington, D. C.

Symposium on the Origin and Composition of Coal

Monday, 2 p.m.

"The Progressive Regional Carbonization of Coal," by David White, D. S.

"The Resolution of Coal by Oxidation," by W. Francis and Dr. R. V. Wheeler, Fuel Technologist, University of Sheffield, Sheffield, England.

"Organic Sulphur Compounds in Coal," by J. Jolly and Dr. R. V. Wheeler.

"The Microstructure of Coal," by Clarence A. Seyler.

"The Constitution of Coal," by F. V. Tideswell and Dr. R. V. Wheeler.

"A Proposed Classification of Coals," by W. T. Thom, Jr.

"Modern Views of Chemical Changes of Coals in Process of Natural Carbonization in the Strata," by A. C. Fieldner, Bureau of Mines, Pittsburgh, Pa.

Green Names Committee On Gompers Memorial

Appointment of a committee consisting of Frank Morrison, Matthew Woll, Daniel J. Tobin, Frank Duffy and James Wilson to have charge of plans for a national labor memorial to the late Samuel Gompers was announced Jan. 22 by William Green, president of the American Federation of Labor.

Members of the committee, all of whom are on the executive council of the Federation, will hold their first meeting during the sessions of the council at Miami, Fla., beginning Feb. 3.

Rate Restrictions Held Up

The Interstate Commerce Commission declined on Jan. 22 to approve the restrictions placed upon the proportional rates on anthracite and coal briquets, moving between Brocton, Buffalo and Buffalo Junction, N. Y., and Erie, Pa., and East Burlington, Ill. The commission in a formal order has suspended the schedules of the New York, Chicago & St. Louis R.R. proposing the restrictions from Jan. 22 until May 22.

In the meantime the commission will conduct an investigation into the proposed restrictions which the commission said were applicable on traffic to all points west of Burlington, to which no through rates are published, so that they would be inapplicable on traffic to certain of such points, thereby resulting in increased rates.

Coal

Tuesday, 10:30 a.m.

"Ultimate Recovery from Anthracite Beds," by Henry H. Otto, Mining Engineer, Lehigh Coal & Navigation Co., Lansford, Pa.

"Belt Conveying of Coal, H. C. Frick Coke Co. Mines," by Thomas W. Dawson, Chief Engineer, Scottdale, Pa.

"Application of Gaussian Curves to Mining Industry," by Hugh Archbald, Philipsburg, Pa.

Mining Methods

Tuesday, 2 p.m.

"Systems of Coal Mining in Western Washington," by Simon H. Ash, superintendent Pacific Coast Coal Co., Carbonado, Wash.

"New Orient, an Unusual Coal Mine," by George B. Harrington, president, Chicago, Wilmington & Franklin Coal Co., Chicago, Ill.

Joint Session Coal and Safety Symposium on Coal Dust and Rock Dusting

Wednesday, 9:30 a.m.

"Review of Coal Dust Investigations," by George S. Rice.

"How and When to Rock Dust," by Capt. Edward Steidle, Carnegie Institute of Technology, Pittsburgh, Pa. Lantern slide illustrations by J. T. Ryan, vice-president of Mine Safety Appliance Co.

"The Sampling of Dust in Suspension in Air," by Philip Drinker, Harvard School of Public Health, Cambridge, Mass.

"Are Humidifying Methods a Failure in Explosion Prevention in Coal Mines?", by Daniel Harrington, Consulting Mining Engineer, Salt Lake City, Utah.

"American Standard Rock Dusting Specifications," by Howard N. Eavenson, Consulting Mining Engineer, Pittsburgh, Pa.

Joint Meeting Coal and Petroleum

Wednesday, 2 p.m.

"What Shall Be Done with Oil and Gas Well to Safeguard Mining Operations?", by A. W. Hesse, Nemacolin, Pa.

Pennsylvania Legislature to Get No Coal Bills

A score of bills will be presented to the 1925 Pennsylvania Legislature by the various state departments, but, according to a statement from the executive department, no bill relating to the mining industry is contemplated.

According to rumor reaching the Capitol at Harrisburg there will not be the usual flood of measures aimed at preventing mine caves or providing for reparation because of surface subsidance.

A deficiency bill may be presented to compensate mine inspectors who served a month during the past biennial appropriation period without pay in order to relieve the situation brought on when Governor Pinchot reduced the appropriation to the state Department of Mines by more than 26 per cent.

Marmet Coal Co. Floats Big Bond Issue

The Otto Marmet Coal & Mining Co., with mines in West Virginia, gave a mortgage Jan. 14 to the Fourth and Central Trust Co., Cincinnati, Ohio, to secure a bond issue of $1,250,000. The mortgage covers all the real estate and personal property of the company in Putnam and Kanawha counties, West Virginia. Proceeds from the sale of the bond issue will be used to make improvements on the company's properties and expanding business. The bonds will bear 6 per cent interest and will be issued in denominations of $100, $500 and $1,000. The Otto Marmet Coal & Mining Co. maintains an elevator at North Bend, Ohio, where coal is unloaded from barges and reloaded into freight cars for inland shipment.

Woodlock to Succeed Potter On Commerce Commission

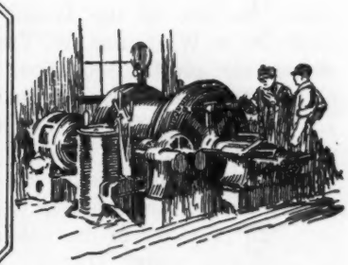
Thomas F. Woodlock, a New York financial writer, was named Jan. 26 by President Coolidge as a member of the Interstate Commerce Commission to succeed Mark W. Potter.

Mr. Woodlock until recently was financial editor of the New York *Sun*. Matthew C. Brush, head of the American International Corporation, a personal friend of the President's, called at the White House Friday to tell Mr. Coolidge about Mr. Woodlock and urge his appointment.

May Abolish Kansas Court Of Industrial Relations

The Kansas Court of Industrial Relations, which has attracted much attention in political and labor circles since being created four years ago, will be abolished if an administration bill introduced in the Senate Jan. 22 becomes a law. Its powers would go to a new body, however. The bill would abolish the Industrial Court, Public Utilities Commission and State Tax Commission, vesting all their powers in a new body to be known as the Public Service Commission, having five appointive members.

Practical Pointers For Electrical And Mechanical Men



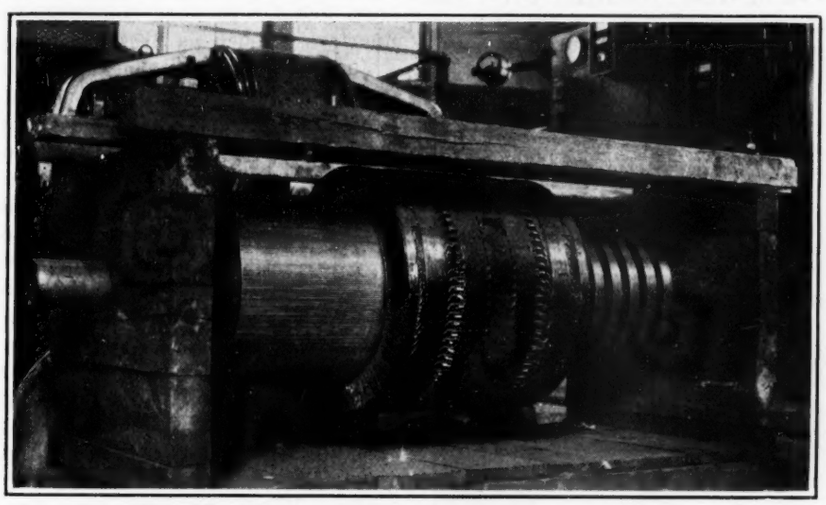
Keep as Spare an Armature That Has Been for Some Time in Use

Spare armatures are a form of insurance against long delays. The first requirement of any insurance is that it be dependable. A repaired armature which has not been tried out in service is not always that kind of insurance. This is particularly true of large armatures which operate at a high peripheral speed; for example, armatures such as the 200-kw., 1,200-r.p.m., 250-volt armature illustrated herewith.

This spare armature has just been received from a repair shop and has been unloaded in a coal company's substation where, on the next day that the mine is idle, it will be put into the converter and given a service test. If it shows no defects it will be left in for regular service and the displaced armature stored as a spare. This system has two distinct advantages. In the first place, if the repair job is defective, the fact is disclosed immediately instead of after a year or perhaps several years.

Ordinarily a repair company will, without hesitation, take steps to correct a defective job if it is reported within a few weeks after the equipment has been shipped, but naturally will show little enthusiasm in correcting a fault reported a year or more after the apparatus has left the shop. In the second place, the method assures that the armature which is stored as a spare was at least in good operating condition when taken out of the machine. This is almost certain assurance that it will operate satisfactorily when an emergency necessitates its use.

In the last four years a coal company operating several mines in West Virginia has received in three instances armatures that were found on test to have been defectively repaired. In one instance the winding was not connected properly and in the two other cases the armatures were badly out of balance. The two armatures that were found to be unbalanced had been repaired by different companies. In each case the repaired armatures were fairly balanced on the ways commonly used for that purpose, but they were far from being in dynamic balance, and vibrated severely when operated at full speed. In each of the three instances, the armatures were tried out immediately after being received and, upon being found defective, were replaced the same day by the old armatures, thereby causing no delay to the mines. This method forestalled serious delays which would have resulted if the armatures had not been tried out until an actual emergency arose.

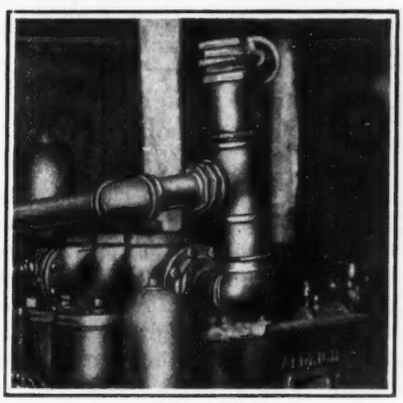


Repaired Armatures Should Be Tried Out Immediately

This armature, just back from the repair shop, is a spare but will be given a trial immediately, and if found to be in good operating condition will be left in service, in which case the proven armature thus displaced will become the spare.

Riser in the Pump Discharge Facilitates Priming

In many mines the coal lays so nearly level that there is but little static head on the discharge lines of gathering pumps. Usually these pumps are located some distance from the swag which is being unwatered. In some cases this is done purposely to eliminate the chance of flooding the pumping equipment, but in most cases it comes about naturally, because the pump is installed when a working place begins to go to the dip and is not moved to a lower level until the suction head becomes too great.



Water is Retained for Priming

Installing risers in the discharge lines of gathering pumps is a standard practice with the Island Creek company. Provision for hand priming, which is seldom necessary, is made by putting a valve on top of the riser.

In places where the static head on the discharge is insufficient to force water back into the pump for priming, it saves time and trouble to have the discharge line raised a short distance above the pump. Such an arrangement is shown in the illustration made from a photograph taken in the new shaft

mine, No. 20, of the Island Creek Coal Co., at Whitmans, W. Va. Here we see the pipe raised about 12 in. above the discharge chamber, and an opening, controlled by a gate valve, provided for hand priming.

Unless the pump valves are defective or are held away from the seats by small particles of dirt, there will be sufficient water trapped in the short raised portion of the discharge line, to prime the pump. In case the entrapped water has leaked back through the pump valves, and more must be added, the valve on the riser provides a convenient opening. Moreover, the raised portion of the discharge line retains the water which has been poured in, and thereby facilitates the priming.

The Island Creek company has now standardized on this method of piping, for all gathering pump service. It is not left to the mine foreman to connect the pump in the manner described, but instead, the power and mechanical men apply the riser, discharge tee, and priming valve when they are installing the pump.

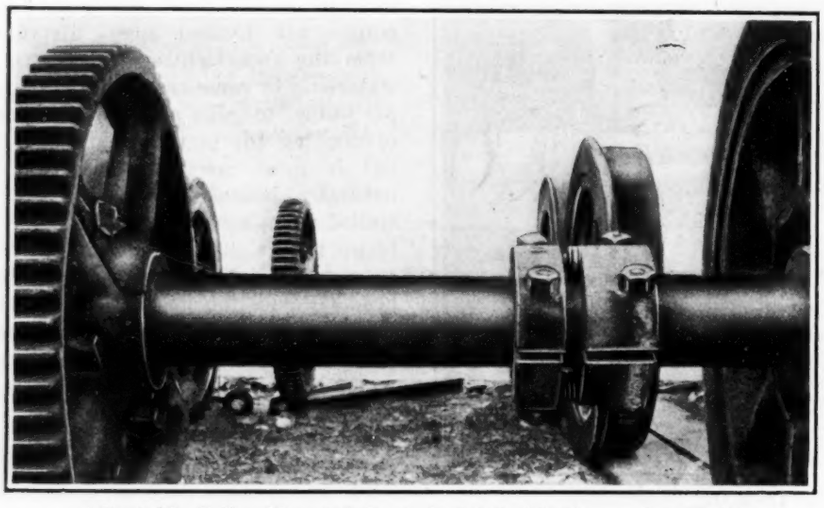
Adjustable Spacing Collar Solves Problem

Almost all mine electricians and mechanics have experienced the need of an adjustable spacing collar for talking up the side play of the motors on the axles of mine locomotives. The accompanying illustration, from a photograph taken in the wheel yard at the central shop of the Island Creek Coal Co., at Holden, W. Va., shows the type of spacing collar that this company has adopted.

L. D. Thompson, chief electrician of direct-current equipment, worked out this design. The principal feature is the use of two ordinary ½x3-in. button-head rivets and a few ½-in. cut washers to provide the adjustable feature. The rivets fit fit loosely in holes drilled in the side of the collar, and the desired spacing is obtained by putting the required number of washers under the rivet heads. The split collars, of cast steel, are made in two widths, as shown. This combination of two collars of unequal width takes care of both inside- and outside-frame locomotives. The axle on which the adjustable collar has been assembled belongs to an inside-frame locomotive. In this case, the collar, which of course turns with the axle, wears on one side against the wearing plate of the journal box, and on the other side against the flange of the motor axle liner. By adding washers to the rivets the wear on locomotives is compensated. All that has to be done is to remove temporarily one of the collars so as to allow space for pulling out the rivet. Perhaps it should be explained that the rivets are not fastened in any way other than by the heads which rest against the small collar.

On outside-frame type locomotives there is less space to be taken up by the collar, so only the wider collar is used. With this assembly there is no wear on one end of the collar, so it is put on in a reverse position, that is with the rivet heads against the wheel. As the collar turns with the axle there is no wear between the rivet heads and the wheel hub.

As the result of a year's use of this new rivet-and-washer type of spacing collar, the Island Creek men seem thoroughly convinced that it is a satisfactory design. It has the qualities which are so desirable in mine equipment. It is rugged, simple, inexpensive, easily applied and adjusted. In addition, no special wrenches are required, and additional spacers, which are ordinary ½-in. cut-steel washers, are items which can be found in almost any electrician's tool bag.

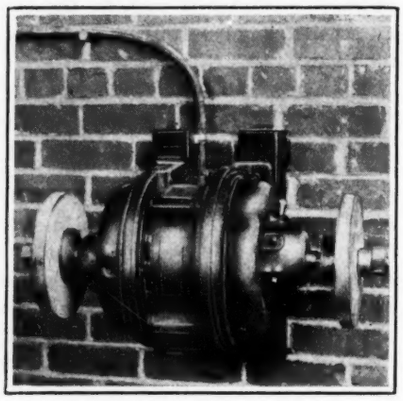


Adjustable Collar Mounted On Axle Of Inside-Frame Locomotive

The collar is made in two sizes. The space between two collars is increased by adding washers to the button-head rivets which fit loosely in holes drilled in the side of the collar. Only two spacing rivets are used, on in each of the wide collar.

Shop Grinder Made from Surplus Motor

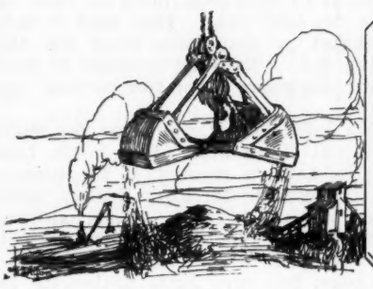
The improvised motor-driven emery grinder, illustrated, was assembled in the shop of the Island Creek Coal Co., at Holden, W. Va. It is mounted on the wall in the blacksmith shop, the purpose being to save the blacksmiths the necessity of carrying their grinding work to the machine-shop wheel. This conserves time and in addition has the advantage of making it possible to keep the wheels of the machine-shop grinder in good condition for finer work, such as dressing tools.



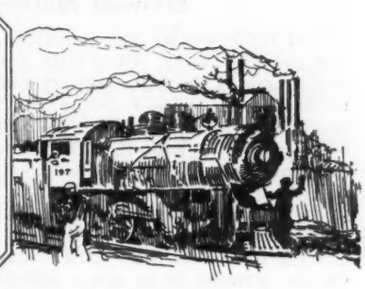
Utilized a Standard Motor

A new shaft, extended at both ends to serve as an arbor, was made in the shop. This new emery grinder when photographed was only partly assembled.

Judging from the other equipment in the Holden shop, this company does not believe in make-shifts; however, as was explained by Roscoe Garret, shop foreman, this home-made emery wheel will serve the purpose nearly as well as one of the factory type, and yet it represents a small cash outlay. A surplus, 5-hp., 1,750-r.p.m., standard squirrel-cage motor was used. It was fitted with a new rotor shaft, the ends of which were machined to serve as wheel arbors. This, and the dust washers to protect the bearings, were the only changes made on the motor. When the photograph from which this illustration was made was taken, the new grinder had not been put into service.



Production And the Market



Continued Heavy Output and Milder Weather Cause Softening in Coal Market

The expected sag in the bituminous coal business, with the moderation in weather conditions and continuation of heavy production, has appeared, as was inevitable. Domestic coal prices are in difficulties in the Middle West and even steam buyers are apathetic, which has caused screenings to slump slightly. Though a slight car shortage is developing in the Kentucky fields production is close to record figures, but as demand is not keeping pace the market is lacking in the strength that was in evidence not long ago. Miners are reported to be rapidly drifting back to work in the mines that have gone non-union and operations are picking up.

Business in the Northwest is considered favorable, the docks having shipped more this month than had been hoped, but here too shipments have dropped off because of mild weather. Prices are firm, however, Pocahontas lump and mine-run quotations having advanced. In the Southwest business is still good, Colorado having a particularly good month for January. Kansas and Utah, however, are catching up on orders. The soft weather in Ohio has caused a marked weakness in high-volatile coals, but the smokeless situation is somewhat better because of the operators' policy of refusing to ship coal except on specific orders.

Eastern Trade Is Firmer

Smokeless prices have been advanced in New England, but as there is no greater demand it is questionable as to whether the increases will hold, though it is worthy of note that some of the mills are increasing operations. Activity is somewhat more brisk in the New York and Philadelphia markets, prices sticking at practically the old levels, however. Business at Baltimore continues to be a disappointment, even the export trade being dormant. At Birmingham, however, the trade is optimistic, as demand has increased and prices are firmer with an upward tendency.

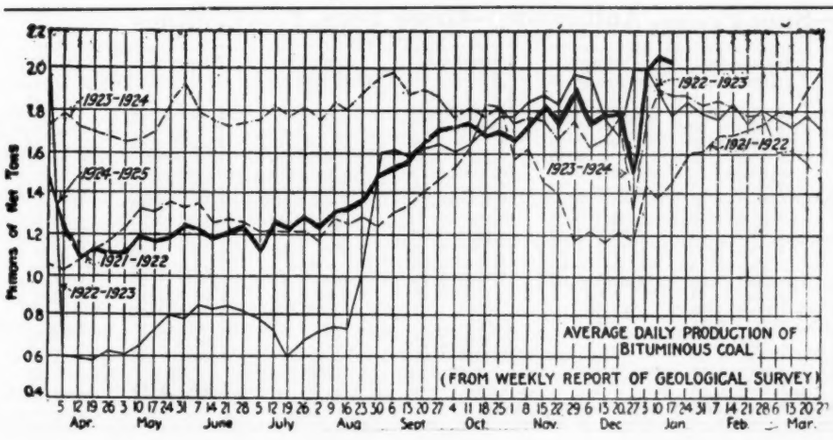
Without showing any particularly high spots the anthracite market has been holding its recent gains, with occasional spurts. Egg is beginning to show some signs of life, though chestnut continues to lead in demand, followed by stove. Steam sizes show the biggest increase in demand, the supply having been curtailed by the strike. The threat of a general strike having passed, the trade is breathing easier. Independent prices are being maintained pretty well all around except for some slight shading on pea.

Coal Age Index of spot prices of bituminous coal registered another slight recession during the last week, standing on January 26 at 173, the corresponding price for which is $2.09, compared with 174 and $2.11 respectively on Jan. 19.

There was a reaction in activity at Hampton Roads during the last week, dumpings of coal for all accounts during the period ended Jan. 22 totaling 399,740 net tons, compared with 421,087 tons the week before.

Output Still Above 12,000,000 Tons

Production of bituminous coal during the week ended Jan. 17, according to the Geological Survey, receded markedly from the high level of the previous week. The total output is estimated at 12,077,000 net tons, a decrease of 513,000 tons from that of the week ended Jan. 10, when 12,590,000 net tons was produced, according to revised figures. Anthracite output during the week ended Jan. 17 was 1,803,000 net tons, compared with 1,785,000 tons in the previous week and 1,884,000 tons in the corresponding week a year ago.



Estimates of Production

(Net Tons)

	1924	1925
BITUMINOUS		
Jan. 3	9,368,000	10,806,000
Jan. 10 (*a*)	12,337,000	12,590,000
Jan. 17 (*b*)	11,992,000	12,077,000
Daily average	1,999,000	2,013,000
Coal yr. to date	450,385,000	371,704,000
Daily av. to date	1,846,000	1,519,000
ANTHRACITE		
Jan. 3	1,436,000	1,255,000
Jan. 10	1,840,000	1,785,000
Jan. 17	1,884,000	1,803,000
Coal yr. to date	72,727,000	70,504,000
COKE		
Jan. 10 (*a*)	258,000	265,000
Jan. 17 (*b*)	261,000	266,000
Cal. yr. to date (*c*)	659,000	637,000

(*a*) Revised since last report. (*b*) Subject to revision. (*c*) Minus one day's production to equalize number of days in the two years.

Midwest Market Softens

Too little winter has begun to break down the Midwest coal market again. Only with great difficulty are the standard Franklin County shippers maintaining their lump price of $3.75 and there is some wobbling at that. But lesser producers in the southern Illinois fields have cut down to $3.25 and have kept it so for several days. Domestic coals generally are in price difficulties, for takings are comparatively light.

Even steam buyers are apathetic, considering the date, and screenings as a result have slumped some. Franklin County producers who have storage space are putting some on the ground in a stern effort to hold the $1.90 price. Others are sacrificing. Saline County screenings move at $1.50 and less. But in spite of price cuts, "no bills" are accumulating in many places and on most sizes of coal. Low-priced strip coal and western Kentucky mine run at $1.25 and lump at $2.50 make trouble for competitors.

Southern Illinois railroad tonnage continues fair. There are plenty of cars and the mines are working from two to five days a week. In the Duquoin district conditions are about the same with "no-bill" coal on track at all mines and prices about 50c. under Franklin County. In the Mt. Olive district working time is fairly good at three and four days a week and a ready market is found for both steam and domestic sizes. In the Standard field conditions are bad. Screenings are down to $1.10 with 2-in. lump at $2.25 and nearly every mine has "no-bill" coal. This field is being hurt in the steam market by shipments from the strip mines in the Carterville field. Railroad tonnage is fairly good and the mines get anywhere from two to four days a week in this field.

In St. Louis there is a quiet domestic business for middle grade coals. Coal that has found little favor in St. Louis in the past is coming in now on account of the price of Franklin County. In the outside territory dealers prefer to buy west Kentucky instead of high grade, although middle grade coals are in fairly good demand, but domestic business generally has slumped. In St. Louis there also is a little movement of coke, but very little anthracite and smokeless.

Kentucky Coal Is Backing Up

The situation is somewhat worse in the Kentucky fields, where heavy production isn't meeting with a very strong buying demand. Choice coal of block size is offered at under $2.75 a ton. A few eastern Kentucky producers of specialty coals are still asking as high as $3, but there is plenty of good coal available at $2.50@$2.75.

In western Kentucky the best block is quoted principally at $2.40@$2.65, some being quoted as high as $2.75. Lump coal is $2.25@$2.50 in both fields, the eastern egg being

Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

Low-Volatile, Eastern	Market Quoted	Jan.28, 1924	Jan.12 1925	Jan.19 1925	Jan. 26 1925†
Smokeless lump	Columbus	$3.35	$3.85	$3.85	$3.75@$4.00
Smokeless mine run	Columbus	2.10	1.90	1.90	1.75@ 2.10
Smokeless screenings	Columbus	1.50	1.20	1.20	1.10@ 1.30
Smokeless lump	Chicago	3.60	4.00	4.00	4.00
Smokeless mine run	Chicago	2.25	2.00	2.00	2.00
Smokeless lump	Cincinnati	3.50	4.10	4.10	4.00@ 4.25
Smokeless mine run	Cincinnati	2.35	2.10	2.00	2.00
Smokeless screenings	Cincinnati	1.80	1.10	1.00	**1.00@ 1.25**
*Smokeless mine run	Boston	5.05	4.20	4.30	**4.40@ 4.50**
Clearfield mine run	Boston	2.00	2.00	1.95	1.75@ 2.20
Cambria mine run	Boston	2.60	2.30	2.30	2.10@ 2.50
Somerset mine run	Boston	2.25	2.10	2.10	1.90@ 2.35
Pool 1 (Navy Standard)	New York	3.00	2.75	2.75	2.50@ 3.00
Pool 1 (Navy Standard)	Philadelphia	3.00	2.80	2.80	2.65@ 3.00
Pool 1 (Navy Standard)	Baltimore	....	2.25	2.25	2.10@ 2.40
Pool 9 (Super. Low Vol.)	New York	2.25	2.10	2.15	2.00@ 2.35
Pool 9 (Super. Low Vol.)	Philadelphia	2.30	2.20	2.20	2.05@ 2.40
Pool 9 (Super. Low Vol.)	Baltimore	1.80	1.85	1.85	1.75@ 2.00
Pool 10 (H.Gr.Low Vol.)	New York	1.95	1.85	1.85	1.75@ 2.00
Pool 10 (H.Gr.Low Vol.)	Philadelphia	1.85	1.85	1.85	1.70@ 2.00
Pool 10 (H.Gr.Low Vol.)	Baltimore	1.80	1.70	1.70	1.65@ 1.75
Pool 11 (Low Vol.)	New York	1.60	1.60	1.60	1.50@ 1.75
Pool 11 (Low Vol.)	Philadelphia	1.65	1.65	1.65	1.60@ 1.70
Pool 11 (Low Vol.)	Baltimore	1.65	1.50	1.50	1.45@ 1.60
High-Volatile, Eastern					
Pool 54-64 (Gas and St.)	New York	1.60	1.50	1.50	1.40@ 1.65
Pool 54-64 (Gas and St.)	Philadelphia	1.70	1.50	1.50	1.45@ 1.60
Pool 54-64 (Gas and St.)	Baltimore	1.50	1.65	1.65	1.60@ 1.75
Pittsburgh so'd gas	Pittsburgh	2.55	2.40	2.35	2.30@ 2.40
Pittsburgh gas mine run	Pittsburgh	2.30	2.10	2.10	2.00@ 2.25
Pittsburgh mine run (St.)	Pittsburgh	2.00	1.85	1.95	1.90@ 2.00
Pittsburgh slack (Gas)	Pittsburgh	1.60	1.60	1.50	1.50
Kanawha lump	Columbus	2.60	2.50	2.50	2.25@ 2.75
Kanawha mine run	Columbus	1.60	1.60	1.60	1.50@ 1.70
Kanawha screenings	Columbus	1.35	1.00	1.00	.70@ .85
W. Va. lump	Cincinnati	3.10	2.30	2.50	*1.85@ 2.50*
W. Va. gas mine run	Cincinnati	1.80	1.30	1.30	**1.25@ 1.40**
W. Va. steam mine run	Cincinnati	1.80	1.30	1.30	**1.25@ 1.40**
W. Va. screenings	Cincinnati	1.20	.80	.90	*.60@ 1.00*
Hocking lump	Columbus	2.75	2.50	2.50	2.35@ 2.65
Hocking mine run	Columbus	1.85	1.60	1.60	1.50@ 1.75
Hocking screenings	Columbus	1.40	1.15	1.15	*1.05@ 1.20*
Pitts. No. 8 lump	Cleveland	2.40	2.40	2.40	*1.90@ 2.75*
Pitts. No. 8 mine run	Cleveland	1.95	1.85	1.85	1.85@ 1.90
Pitts. No. 8 screenings	Cleveland	1.60	1.45	1.40	*1.30@ 1.45*

Midwest	Market Quoted	Jan.28 1924	Jan.12 1925	Jan.19 1925	Jan. 26 1925†
Franklin, Ill. lump	Chicago	$3.50	$3.60	$3.60	$3.50@$3.75
Franklin, Ill. mine run	Chicago	2.35	2.35	2.35	2.25@ 2.50
Franklin, Ill. screenings	Chicago	1.85	1.95	1.95	*1.75@ 2.00*
Central, Ill. lump	Chicago	3.10	3.10	3.10	*3.00*
Central, Ill. mine run	Chicago	2.10	2.20	2.20	2.15@ 2.25
Central, Ill. screenings	Chicago	1.45	1.95	1.95	*1.40@ 1.50*
Ind. 4th Vein lump	Chicago	3.10	3.50	3.50	*3.00@ 3.25*
Ind. 4th Vein mine run	Chicago	2.60	2.35	2.35	2.25@ 2.50
Ind. 4th Vein screenings	Chicago	1.85	1.85	1.85	*1.50@ 1.65*
Ind. 5th Vein lump	Chicago	2.60	3.00	3.00	*2.50@ 2.75*
Ind. 5th Vein mine run	Chicago	2.10	2.10	2.10	2.00@ 2.25
Ind. 5th Vein screenings	Chicago	1.45	1.70	1.70	*1.35@ 1.50*
Mt. Olive lump	St. Louis	3.10	3.00	3.00	3.00
Mt. Olive mine run	St. Louis	2.50	2.35	2.35	2.25@ 2.50
Mt. Olive screenings	St. Louis	1.50	1.80	1.80	1.75@ 1.90
Standard lump	St. Louis	2.75	2.55	2.45	2.40@ 2.50
Standard mine run	St. Louis	1.95	1.95	1.95	1.90@ 2.00
Standard screenings	St. Louis	1.10	1.30	1.20	*1.05@ 1.25*
West Ky. block‡	Louisville	2.85	2.60	2.60	*2.40@ 2.75*
West Ky. mine run	Louisville	1.65	1.55	1.55	1.35@ 1.75
West Ky. screenings	Louisville	1.10	1.25	1.10	1.00@ 1.25
West Ky. block‡	Chicago	2.85	2.60	2.60	*2.25@ 2.60*
West Ky. mine run	Chicago	1.75	1.50	1.50	1.40@ 1.65
South and Southwest					
Big Seam lump	Birmingham	3.85	2.85	2.50	**2.50@ 3.25**
Big Seam mine run	Birmingham	1.80	1.70	1.50	**1.50@ 2.00**
Big Seam (washed)	Birmingham	2.10	1.85	1.60	**1.50@ 2.00**
S. E. Ky. block‡	Chicago	3.35	2.50	2.60	2.50@ 2.75
S. E. Ky. mine run	Chicago	2.10	1.50	1.50	1.25@ 1.75
S. E. Ky. block‡	Louisville	3.25	3.00	2.75	2.50@ 3.00
S. E. Ky. mine run	Louisville	1.80	1.50	1.50	*1.25@ 1.50*
S. E. Ky. screenings	Louisville	1.10	1.00	1.00	*.75@ 1.00*
S. E. Ky. block‡	Cincinnati	3.00	2.50	2.60	**2.50@ 3.00**
S. E. Ky. mine run	Cincinnati	1.80	1.35	1.30	**1.25@ 1.60**
S. E. Ky. screenings	Cincinnati	1.15	.85	.90	.75@ 1.10
Kansas lump	Kansas City	5.00	4.85	4.85	4.75@ 5.00
Kansas mine run	Kansas City	3.50	3.35	3.35	3.25@ 3.50
Kansas screenings	Kansas City	2.25	2.50	2.50	2.50

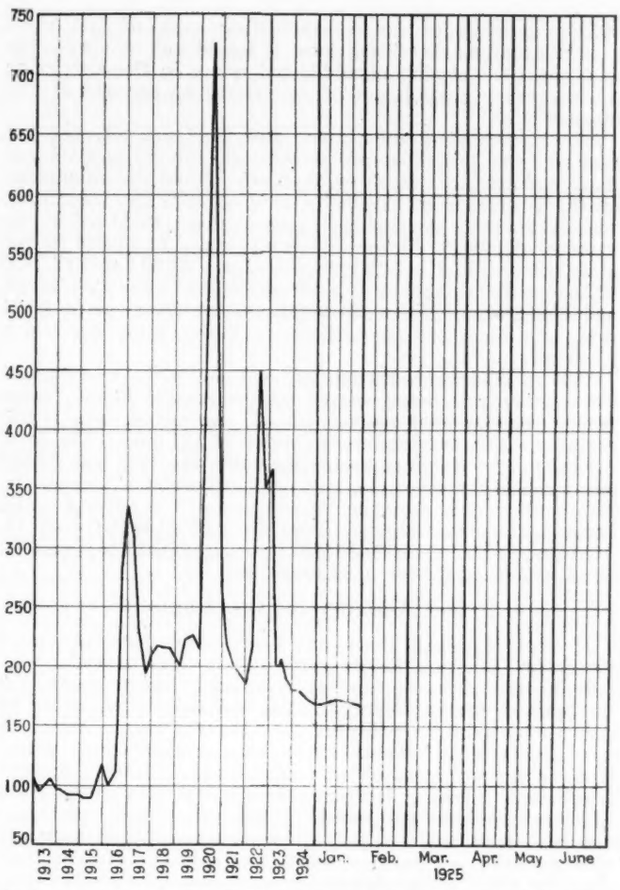
*Gross tons, f.o.b. vessel, Hampton Roads. † Advances over previous week shown in **heavy type**; declines in *italics*.

‡ The term block is used instead of lump in order to conform to local practice, but the same coal is being quoted as heretofore.

Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

	Market Quoted	Freight Rates	Jan. 28, 1924 Independent	Jan. 28, 1924 Company	Jan. 19, 1925 Independent	Jan. 19, 1925 Company	Jan. 26, 1925† Independent	Jan. 26, 1925† Company
Broken	New York	$2.34	$8.00@$8.50	$8.00@$9.25	.....	$8.00@$9.25	.....	$8.00@$9.25
Broken	Philadelphia	2.39	.....	.....	.....	9.15	.....	9.15
Egg	New York	2.34	8.50@ 9.25	8.75@ 9.25	$8.50@$9.00	8.75@ 9.25	**$8.50@ $9.25**	8.75@ 9.25
Egg	Philadelphia	2.39	8.50@10.00	8.75@ 9.25	9.45@ 9.75	8.80@ 9.25	9.45@ 9.75	8.80@ 9.25
Egg	Chicago*	5.06	7.50@ 8.80	8.00@ 8.35	8.17@ 8.40	8.08	8.17@ 8.40	8.08
Stove	New York	2.34	9.75@10.50	8.75@ 9.25	9.75@10.25	9.00@ 9.50	9.75@10.25	9.00@ 9.50
Stove	Philadelphia	2.39	9.85@11.00	8.90@ 9.25	10.10@10.75	9.15@ 9.50	10.10@10.75	9.15@ 9.50
Stove	Chicago*	5.06	7.95@ 9.25	8.00@ 8.35	8.80@ 9.00	8.53@ 8.65	8.80@ 9.00	8.53@ 8.65
Chestnut	New York	2.34	9.75@10.50	8.75@ 9.25	9.75@10.25	8.75@ 9.40	**9.75@10.50**	8.75@ 9.40
Chestnut	Philadelphia	2.39	9.85@11.50	8.90@ 9.25	10.00@10.75	9.25@ 9.40	10.00@10.75	9.25@ 9.40
Chestnut	Chicago*	5.06	7.95@ 9.25	8.00@ 8.35	8.61@ 9.00	8.40@ 8.41	8.61@ 9.00	8.40@ 8.41
Pea	New York	2.22	4.75@ 5.25	6.15@ 6.65	4.75@ 5.50	5.50@ 6.00	4.75@ 5.50	5.50@ 6.00
Pea	Philadelphia	2.14	5.25@ 7.25	6.35@ 6.60	5.75@ 6.00	6.00	5.75@ 6.00	6.00
Pea	Chicago*	4.79	4.50@ 5.60	5.40@ 6.05	5.36@ 5.75	5.36@ 5.95	5.36@ 5.75	5.36@ 5.95
Buckwheat No. 1	New York	2.22	2.25@ 3.50	3.50	2.25@ 2.75	3.00@ 3.15	**2.25@ 3.00**	3.00@ 3.15
Buckwheat No. 1	Philadelphia	2.14	2.00@ 3.50	3.50	2.50@ 3.00	3.00	2.50@ 3.00	3.00
Rice	New York	2.22	1.75@ 2.50	2.50	2.00@ 2.35	2.00@ 2.25	2.00@ 2.35	2.00@ 2.25
Rice	Philadelphia	2.14	1.50@ 2.50	2.50	2.00@ 2.25	2.25	2.00@ 2.25	2.25
Barley	New York	2.22	1.25@ 1.50	1.50	1.40@ 1.65	1.50	1.40@ 1.65	1.50
Barley	Philadelphia	2.14	1.00@ 1.50	1.50	1.50	1.50	1.50	1.50
Birdseye	New York	2.22	1.45@ 1.60	1.60	1.40@ 1.65	1.60	**1.60@ 1.75**	1.60

* Net tons, f.o.b. mines. † Advances over previous week shown in **heavy type**, declines in *italics*.



Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines

	1925			1924
	Jan. 26	Jan. 19	Jan. 12	Jan. 28
Index	173	174	175	187
Weighted average price	$2.09	$2.11	$2.12	$2.26

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke; 1913-1918," published by the Geological Survey and the War Industries Board.

$1.75@$2, as against $2.25@$2.50 for western, while nut is around $1.75@$2.10 in both fields. Mine run is offered as low as $1.25 and up to a top of about $1.50, with some quotations over $1.50, but without many sales, as mine run is slow. Screenings are weaker at 75c.@$1 for eastern and 90c.@$1.15 for western.

It is reported that just a little car shortage is developing in the Kentucky fields, but production for the month will be quite close to record level, it is asserted. Reports of various operators in the western Kentucky field indicate that men are rapidly drifting back to the mines which have gone non-union, and production of such mines is improving daily.

Outlook "Fairly Rosy" in Northwest

Shipments from the Duluth-Superior docks have dropped off somewhat in the past week owing to a spell of mild weather, which has come to the Northwest after several weeks of intense cold. Despite this fact the docks have shipped much more than even the most optimistic of dock men hoped, and business looks fairly rosy.

Docks are beginning to hold their own in Twin Cities trade, which is a good sign of continued prosperity. Lower prices, the slight change for the better in freight rates and improved coal quality have contributed.

Pocahontas is again in the limelight. One dock is reported to have a small supply of lump still on hand and another is bringing it in all-rail without much profit, merely to hold trade. Business in hard coal, at the same time, is better than was looked for. Dock men think that all hard coal will go out before the opening of navigation.

Demand from industrials improves. One large mining company on the Mesabe Ranges will open bids soon, and has placed a large order. Prices are firm throughout with the exception of Pocahontas, which has gone up a little in mine run and lump. Mine run is now firm at $5.25@$5.50 and screenings at $4@$4.50.

With Milwaukee docks well supplied for any demand, the coal trade there is having its usual winter experience—fluctuations of demand incident to changes of the weather. The weather continues comparatively mild, which has been characteristic of January thus far. But a cold wave is heralded; and, of course, February is in the offing.

West Still Has Business

Operators in the Southwest are catching up with orders. Some report deliveries of Kansas lump from a week to ten days slow and of screenings from three days to a week, but others are filling orders on receipt. The demand still is brisk, but there has been no interference with production, either by weather or holidays, for a couple of weeks. The situation in Oklahoma is similar to that in Kansas, while Arkansas has returned to midwinter normal with a light demand.

In spite of a moderation in Colorado weather the demand for domestic coal continues to be very good. The orders for nut coal have suffered a slight setback as have pea and slack coal, but the demand for lump far exceeds the supply. Future orders are booked as far ahead as Feb. 1. Should the cold weather continue, the operators will consider January business among the best in history. Mines are operating approximately 90 per cent with plenty of labor and no interruption in transportation.

The following prices are in effect: Walsenburg-Canon City lump coal, $5.25; nut, $4.25; no fixed price on slack coal; washed pea coal, $3.50; Trinidad Segundo coke, $7.50; Trinidad Segundo nut coke, $6; Crested Butte base burner anthracite No. 3 and No. 5, $9; chestnut size, $5.75. The demand for southern Colorado coke is very good. This will necessitate the firing up of more coke ovens.

In Utah operators have caught up on their orders, which piled up during the recent below zero weather, and the marketing is softening again. Working time, which had been around full time for a few weeks, is steadily falling off. The weather is still wintry in the Utah coal trade territory, but it is much warmer than it was. The market for egg and nut coal is soft. Dealers are storing it for their spring and summer trade. Stocks are very low in Salt Lake City. Prices continue steady, the labor and car situations are good and the industrial outlook is much better than normal, it is declared.

Conditions Muddled at Cincinnati

The much muddled market at Cincinnati seems to have lost its ability to extricate itself. Kentucky sales offices are still putting up a brave front on the price of block, while their prices on slack and the mine run is soft and crumbly; some West Virginia shippers are still trying to maintain a price of $2.50 on their 4-in. run of mine in the face of the fact that the most of attention centers around the firms that are able to make a $1.85-$2 price and their run of mine has lost its months old stability. The smokeless market in the face of this has been able to maintain a fairly firm stand without much chance for price reductions on the opening of the new month.

Though excuses can be found for each passing phase of the market, the trade in general seems to have realized that it all traces back to the fundamentals of supply and demand. The offerings and eagerness to make sales undoubtedly is the cause of the softness. The absorption point has been reached and passed and reserve stocks place the buyer so that he has the whiphold of the seller. Bidding against the other fellow to make sales is furthering the scramble among the producing areas of West Virginia and Kentucky, but operations are crowding and continue to crowd this market and the distributing area.

With the dead of winter here the Louisville & Nashville reservoir at DeCoursey, the C. & O.'s at Russell and Stevens and even the classification yards on this side of the river are jammed with "no bills" and distress coal. Portsmouth, which is the gateway for the Norfolk & Western, possibly is the freest of all of them. The retailers have slowed up to the point where they haggle and trade for whatever supplies they need. Detroit and Toledo, two of Cincinnati's best customers, are only mildly interested in price quoting.

Circular letters bring but meager responses. It is a sick January so far as high-volatile coals are concerned.

The smokeless situation is somewhat better because of the avowed policy of some of the operators to refuse to mine coal except to fill specific orders. The slack situation is the weakest here with a fair run of business on mine run, and prepared—lump, egg and nut—holding fairly strong.

Several soft days slowed up retail deliveries here, but in general the movement is about of seasonal volume. Prices are: Smokeless lump, $8@$9; run of mine, $5.50@$6.25; bituminous lump, $5.75@$7; slack, $4@$4.50. Because of the large ice floes coming down the river navigation has been difficult, the Winifrede Coal Co. losing six barges on a bar above the city last week and the Campbell's Creek Coal Co. three.

Warmer weather has caused a marked weakness in all grades of coal at Columbus. This is especially noticeable in domestic sizes, which have been a weather proposition for some time. Dealers have pretty fair stocks and quite a few orders placed when zero temperatures prevailed have been cancelled. As a result there is a larger amount of distress coal on the market, which sells at extremely low prices as a rule. Retailers in rural sections are buying in moderate quantities as farmers are buying better than formerly, but city dealers are not delivering as much coal as usual at this time of the year. Preference is shown for Pocahontas and other smokeless varieties and splints. There is an oversupply of coal on cars in northern Ohio and Michigan points, which still further complicates the situation. Dealers have been shading prices in order to move stocks, although this is not as general as might be expected. Pocahontas and smokeless varieties are retailing at $8@$8.50; splints at $4.25@$7.75 and Hocking at $6.25@$6.50.

Steam business is still slow and reserves are fairly large. Iron and steel plants are taking a slightly better tonnage, but some of the utilities have cut down orders. Railroad requisitions are still fair. Ohio screenings are still rather firm, due entirely to reduction in the lump output. West Virginia screenings are coming in large volume and weakness in prices is reported on many varieties. Output is around 18 to 20 per cent of capacity in the southern Ohio field and in eastern Ohio approximately 40 per cent of capacity.

All Lines Dull at Cleveland

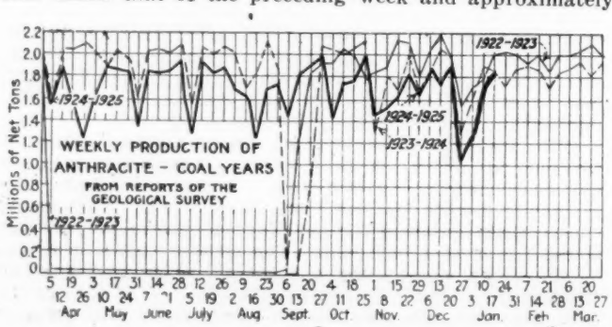
The market at Cleveland has been exceedingly slow and quiet during the past week; in fact, according to the selling end of the trade, steam buyers are making little inquiry for fuel at this time, having been pretty much out of the market during the week as compared with ten days ago. In the retail trade, due to the mild weather, domestic consumers have not been buying, and the yards are all pretty well replenished ready for the next spurt that may come.

From all indications, the anticipated improvement of business conditions is not developing to any noticeable extent, or at least not to a degree that has yet been reflected in coal purchases.

The first week of the new year saw some better activity in the steam trade, but that now seems to have eased off. In the present situation there is little optimism among eastern Ohio producers that there will be any decided upturn in the coal trade in the near future.

Concurrent with sluggish demand and the appearance of some "distress" coal at industrial centers, spot prices have softened 5c. to 10c. per ton during the week, with slack at $1.30, and ¾-in. lump in some cases under $2.

Production in the eastern Ohio No. 8 field during the week ended Jan. 17 was 277,000 tons, or about 39 per cent of estimated potential capacity. This output was about 30,000 tons under that of the preceding week and approximately 105,000 tons under the corresponding week of last year.



In view of market conditions, it would not be surprising to witness the closing of additional mines in the district or the necessary curtailment of operations on account of "no market."

The big showing of winter lately has not affected the coal trade at Buffalo to any extent; car supply is good and there has been no real snow blockade. From the standpoint of the consumer the trade is in a satisfactory condition. The bituminous market continues quiet, with prices as before: $1.60@$1.75 for Fairmont lump, $1.40@$1.50 for mine run and $1.25@$1.40 for slack, on a $2.39 rate; $2.25@$2.50 for Youghiogheny gas lump, $2@$2.25 for Pittsburgh and No. 8 steam lump, $1.40@$1.60 for slack, on a $2.24 rate, and $1.75@$2 for Allegheny Valley mine run, on a $2.09 rate.

The increased production of coal since the opening of the new year is being shared by the central Pennsylvania field. For the week ending Jan. 17 the output was 17,030 carloads. The previous week totaled 17,121 cars. The total production for January to and including the 17th was 39,800 cars. This, however, is still under December, when the total production for the same period was 40,314 cars. Prices range as follows: Pool 18, $1.65@$1.70; pool 11, $1.70@$1.75; pool 10, $1.80@$2; pool 9, $2@$2.15; pool 71, $2.25@$2.35, and pool 1, $2.40@$2.60.

Prices Advance in New England

In New England there has been some marking up of prices on Hampton Roads coals, but it remains to be seen whether the advances can be sustained. Current demand is no greater than a fortnight ago, and there can hardly be said to be a better prospect for the next thirty days. A few of the mills have taken on more operatives at reductions in the wage scale, but reserves are still large in most instances. There is little to justify firm expectations for another month or two; neither railroads, power plants nor the industries will require much more coal than they are now using, and increased prices will for the present have only the effect of slowing down purchases that would otherwise have been placed from week to week.

At Hampton Roads this week there is again an increase in the volume of Pocahontas and New River on hand for spot disposition. An apparently concerted effort is being made to hold at $4.50 per gross ton f.o.b. vessel as a minimum, but the trade is really looking for another soft spot to develop within a few days. Once a level of $2 per gross ton at the mines seems in sight the itch to produce coal overcomes elaborate plans to support a price campaign, and only a day or two is needed to weaken the structure.

As yet there is no sign of higher prices on Pennsylvania coals all-rail. Practically all the well-known grades are dragging along at low figures that have prevailed for months, and until there is a really firm market on the smokeless coals via Hampton Roads there is likely to be no improvement in the demand for coal from other sections.

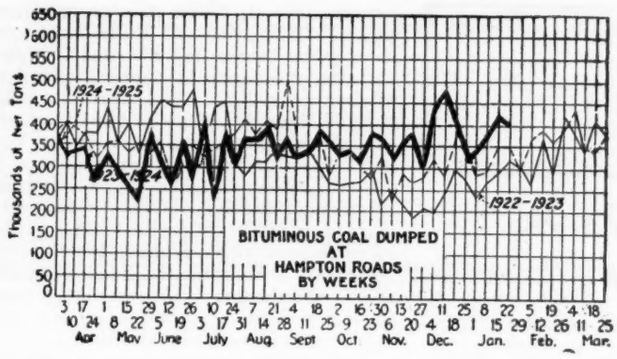
On cars Boston and Providence there also have been advances in price on Southern coals, partly because of higher asking prices at Hampton Roads but owing also to higher marine rates. Steamers that were offering freely at 65c. a fortnight ago are now commanding 75c. to Providence, and it is understood that 80@85c. is being asked to Boston. In consequence there is effort to sell on cars at $5.75, although sales are still reported at $5.60@$5.70.

New York Market More Active

There is more activity in bituminous coals at New York, but prices show no increase. Consumers are placing new orders when the price is satisfactory, but are on the lookout for bargains. Most houses complain of slow demand and low prices but the fact remains that there is considerable quiet buying going on and that a heavy output is being moved. Many operators producing the better grades of coal are sold up for some time ahead, but the cheaper coals are hard to place.

Contracting is progressing quietly at figures slightly above current market prices for spot coals. Large consumers appear anxious to keep their reserve stocks up to the mark and those having standing orders are willing to take an extra car or two if the occasion demands.

Tidewater coals are moving in good volume. The daily average number of cars at the docks hovers around 1,500, but there is no congestion and loaded boats are soon picked up.



There is less gloom among bituminous shippers at Philadelphia, as the strong tone to the steel market is making its impress upon them and incidentally there has been a moderate improvement in orders. Shippers of low volatile coals probably have experienced most of the improvement, and those concerns with the very best fuels are occasionally heard to say they have sufficient business to carry them for the balance of the month. It seems that the smaller manufacturers with their one, two and five car orders are bobbing up more frequently, both because of increased ordering of their products and the urge given them by the frequent snow falls of late, making them just a trifle anxious as to deliveries.

It has also been found that those concerns with contracts are now taking full quotas. These buyers have not ceased to buy spot coal, either, but are putting some fuel away, all of which gives a more cheering aspect to the business.

Gas slack remains in short supply, keeping the price of this coal quite close to mine-run. In this latter coal there has been increased buying for railroad account. It may be that the roads anticipate that with the rescinding of the assigned car order on March 1 they are not going to be in the former advantageous position of getting this coal just a bit lower than the ordinary buyer.

Baltimore Has Unhappy Lot

January failed to bring the hoped for relief in the Baltimore soft-coal business. While some of the operators shipping to this section report moving a pretty good tonnage, nevertheless they are not working under especially happy conditions. While a somewhat better line of inquiry has developed, the trade looks upon this more in the light of a seasonal improvement than a sustained business advance. The price situation has shown no distinct betterment for the past three or four weeks and excellent steam coals are still available at prices that mean either little or no profit to the producer. The export situation here this month has been a distinct disappointment. Not a single vessel has been reported with export coal since Jan. 9.

Increased activity in steam coal is reported in Birmingham, demand showing greater strength and volume, quotations firming up, with a tendency toward higher figures, and feeling in the trade is optimistic. Industrial requirements are gradually increasing, spot business is showing gains and some contracts are reported being signed for periods of six and twelve months. Industrial plants and utilities which have been using fuel oil are reported to be seriously considering conversion to coal on account of the increased cost of oil and other unsatisfactory conditions in connection with its use. New Orleans Light & Water Board, which has been using fuel oil for quite a long while, has definitely decided to return to the use of coal in its power house, so it is stated, and will soon seek bids on 50,000 tons of washed coal from this district.

Consumption of furnace coke is heavy locally and the market for foundry coke is quite strong, quotations increasing to a range of $5@$5.50 per ton ovens. Inquiry for egg and nut coke also is very good, most of this moving to Western territory.

The domestic market is still rather draggy, requiring a good deal of effort to move the output of the mines. Retail demand is not especially strong but the weather is sufficiently seasonable to keep dealers well supplied with hand-to-mouth orders. Quotations on the best grades remain firm, but Big Seam and similar lower grades are obtainable from small operations at 25 to 50c. under schedule. Most of this, however, is ill prepared and not representative of the Big Seam product. Car supply is barely sufficient to meet requirements, and restrictions on the placing of empties are effective on one of the larger carriers. Production for the week of Jan. 10 was 385,000 tons.

Anthracite Holds Even Level

The New York market for hard coal, save for an occasional spurt, continues on an even level. Coal-consuming temperatures have stirred business a little for the retail dealer, but have not affected to any noticeable degree the producer and wholesaler. There is plenty of coal in the yards to meet any immediate demand although the buyer may not be able to get his particular size. The greatest increase in demand centered in the steam sizes, and the available tonnages of these coals became shorter because of the strike.

While quotations for domestic sizes of independent coals show increases in some instances over last week, offerings were made during the week at lower figures. Some shippers had surplus coals at the docks and in boats, which were offered at less than current market prices. Some surprise was occasioned when announcement was made by one of the large companies of a 25c. reduction in the price of grate and egg coals and a 25c. advance in stove coal.

Philadelphia anthracite trade is lacking in the snap that is expected at this time of the year. Producers are compelled to solicit intensively to move all the coal that is mined. Some say that on account of the poor delivery conditions the tonnage moved has been so curtailed that it is impossible for them to take in the coal they are accustomed to receive. On the other hand there is no question that the consuming public has been economizing on fuel, and numerous dealers claim that they have not put out as much coal this year to date as they did last year during the same period, and with weather much less favorable for coal burning last January.

There has been some improvement in demand this week, many dealers having as much business as they can handle, although very few of them have orders left over from one day to another. There should be continued improvement, because storing was curtailed last summer and many who did buy are beginning to run out. This is particularly true of egg coal, which has been such a slow seller for two months. Now reports come in that egg is being called for a little more actively. The bulk of the trade is still on nut coal, although the company producers are shipping more liberally of this size, which makes it more difficult to move the higher priced independent fuel. So far the independents have been able to cling to their prices all around, except for moderate shading on pea.

The steam trade is, if anything, a trifle improved, yet not sufficient for the entire production to be absorbed by the market.

As a whole the month of January has been one of improvement in the Baltimore retail hard-coal trade, due to the old style winter during the past four weeks, which caused home consumption to increase considerable over December records. The business has been largely in replenishing stocks, in one- to four-ton lots for the most part, but it has been of such volume as to keep the dealers fairly busy. Movement from mines to yards has been unhampered to any great extent, and supplies are still liberal.

At Buffalo the anthracite trade is only fair. Though the snow is getting deep the consumer is not disturbed. He seems to think that if there is a coal shortage there is at least coke and gas enough to help out. The demand for coke for house use is increasing rapidly, but Buffalo is not depending on it as much as on gas. The independent anthracite trade is rather quiet. Prices are about on a par with the schedule, which means that the demand is not brisk. The demand for small sizes is better than it was, for it is becoming more common to use them in furnaces.

Car Loadings, Surplusages and Shortages

	Cars Loaded	
	All Cars	Coal Cars
Week ended Jan. 10, 1925	932,807	217,412
Previous week	765,727	180,468
Week ended Jan. 12, 1924	872,023	211,053

	Surplus Cars		Car Shortage	
	All Cars	Coal Cars		
Jan. 14, 1925	255,967	92,829	.....	.....
Jan. 7, 1925	280,666	106,987	.....	.....
Jan. 14, 1924	292,921	129,846	.....	.....

Foreign Market And Export News

British Coal Movement Increases; Prices Generally Steady

The Welsh coal trade has suffered severely from the effects of the heavy storms which have visited Great Britain, and it is estimated that half a million tons of shipping was delayed in consequence. Stocks of coal had become so heavy that the owners were selling at cut prices to effect clearances, and in some districts pits stopped because of the glut on the market. Shipments have materially increased, however, with a moderate volume of new business and some forward inquiries. Prices are generally steady, but it is possible to obtain concessions for prompt deliveries. Operators are refusing to cut prices for early delivery next month on account of the arrears caused by late tonnage arrivals. The Rumanian State Railways are inquiring for 100,000 tons of best Admiralty large for delivery over the year.

The wages of the Welsh miners remain on the minimum of 42.22 per cent above the 1915 standard, the audit for November showing the earnings to be 12.12 per cent above the standard. To make the wages up the operators have had to sacrifice £308,329 for the month.

Gales have dislocated the Newcastle market and there is little business so far, merchants showing a tendency to hold off. The Portuguese Railways are inquiring for 30,000 tons of smalls.

Production by the British collieries in the week ended Jan. 10, a cable to *Coal Age* states, was 5,201,000 tons, according to official reports. This compares with an output of 3,921,000 tons in the preceding week.

Hampton Roads Market Softer; Prices Weaken

Hampton Roads business was of an indifferent character last week, with an increased supply of coal at the piers due to heavy production after the holidays. Demand has not been sufficient to move the supply, shippers report, and prices are inclined to weaken.

Coastwise and bunker trade was fair, showing some increase, but foreign business was dropping back to practically nothing, except the fulfillment of old contracts which had hung over from last year. No new contracts are being reported, and inquiries in general were comparatively few.

Demand Wanes in French Market; Prices Unchanged

There has been no important change in the French coal market. Demand is quieter, but as the output was curtailed during the holidays, stocks are about normal.

Prices also remain unaltered on the whole, though for certain grades, more neglected than others—duffs, for instance—the collieries have to grant rebates in order to stimulate the demand. Patent fuel continues extremely dull.

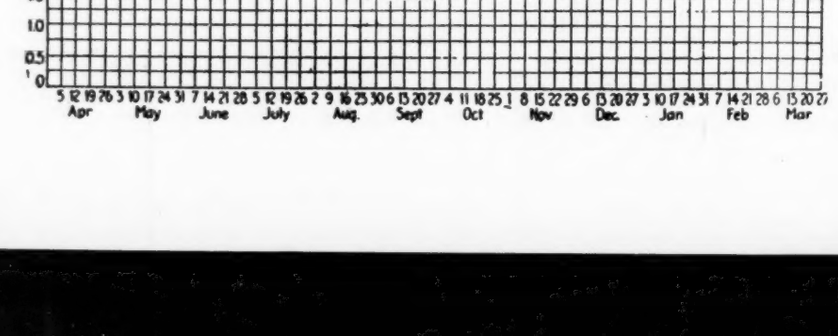
The ample supply of rolling stock to the mines has brought a decrease in the water freight rate, which now is 24f. Béthune-Paris. Owing to the advance in rail transport charges, however, the market is on the lookout for an increase in canal transport tariffs. The new schedule of rail loading is to comprise a rise of 20 per cent of the present rates and the doubling of demurrage charges from 60c. to 1f. 20c. Rates also are to be based on the distance actually covered.

Statistics relating to indemnity deliveries for the month of December have not been published yet, but they are estimated at 242,000 tons of coal, 415,000 tons of coke and 38,000 tons of lignite briquets, a total of about 700,000 tons for France and Luxemburg. France alone is entitled, under the Reparation Commission's program, to 671,000 tons per month, so that the deficiency is still large.

During the first fourteen days of January the O. R. C. A. was supplied with 137,817 tons of Ruhr coke, or about 9,800 tons a day. It was thought that the deficiency in supply, which is wholly imputable to the Germans who stopped their deliveries at the outset of November during the negotiations between the Reparation Commission and the Government of the Reich concerning the prolongation of the former settlement with the M. I. C. U. M., would be wiped out in January, but as the shipments this month hardly reach 10,000 tons a day it is not likely that Germany will be able to cover the deficiency within the given time.

There is no prospect of a change in the price of coke.

The situation of the Belgian coal market has undergone little change recently, but because of the recovery in the iron and steel trade, a resumption of activity in the coal industry is not unlikely. Stocks at the plants too are very low. Foreign competition is stationary as far as France and Great Britain are concerned, but is acute from the Netherlands, particularly in the Borinage district. There is some doubt as to the origin of the coal sold under the Dutch label.



Export Clearances, Week Ended Jan. 22, 1925

FROM HAMPTON ROADS

	Tons
For Cuba:	
Br. Str. Berwindmoor, for Havana	9,438
Dan. Str. Nordstjernen, for Havana	3,368
For Italy:	
Ital. Str. Liberta, for Porto Ferrajo	5,940
Ital. Str. Labor, for Genoa	5,689
Ital. Str. Robilante, for Porto Ferrajo	9,450
For Bermuda:	
Amer. Schr. Edna Hoyt, for St. Georges	3,368

Hampton Roads Pier Situation

N. & W. Piers, Lamberts Pt.:	Jan. 15	Jan. 22
Cars on hand	1,351	1,665
Tons on hand	79,936	112,808
Tons dumped for week	125,791	122,773
Tonnage waiting	2,000	10,000
Virginian Piers, Sewalls Pt.:		
Cars on hand	1,055	1,166
Tons on hand	71,600	81,050
Tons dumped for week	177,411	105,017
Tonnage waiting	3,401	26,123
C. & O. Piers, Newport News:		
Cars on hand	1,816	1,812
Tons on hand	90,300	88,225
Tons dumped for week	72,669	129,121
Tonnage waiting	3,045	14,790

Pier and Bunker Prices, Gross Tons

PIERS

	Jan. 17	Jan. 24†
Pool 9, New York	$4.75@$5.00	$4.75@$5.00
Pool 10, New York	4.50@ 4.65	4.50@ 4.65
Pool 11, New York	4.40@ 4.55	*4.35@ 4.55*
Pool 9, Philadelphia	4.90@ 5.25	4.90@ 5.25
Pool 10, Philadelphia	4.45@ 4.70	4.45@ 4.70
Pool 11, Philadelphia	4.30@ 4.50	4.30@ 4.50
Pool 1, Hamp. Roads	4.35	*4.20*
Pool 2, Hamp. Roads	4.15	*4.10*
Pools 5-6-7 Hamp. Rds.	4.00	4.00

BUNKERS

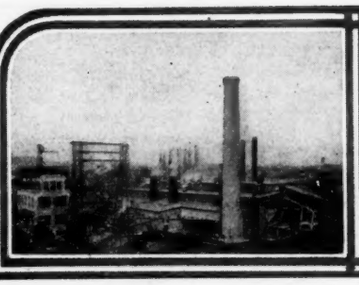
Pool 9, New York	$5.00@$5.25	$5.00@$5.25
Pool 10, New York	4.75@ 4.90	4.75@ 4.90
Pool 11, New York	4.65@ 4.80	*4.60@ 4.80*
Pool 9, Philadelphia	4.90@ 5.25	4.90@ 5.25
Pool 10, Philadelphia	4.75@ 4.95	4.75@ 4.95
Pool 11, Philadelphia	4.50@ 4.70	4.50@ 4.70
Pool 1, Hamp. Roads	4.40	*4.25*
Pool 2, Hamp. Roads	4.25	*4.15*
Pools 5-6-7 Hamp. Rds.	4.10	*4.00*

Current Quotations British Coal f.o.b. Port, Gross Tons

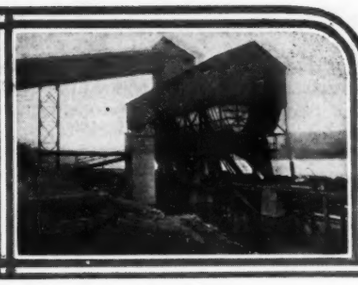
Quotations by Cable to *Coal Age*

Cardiff:	Jan. 17	Jan. 24†
Admiralty, large	27s.@27s.6d.	27s.@27s.6d.
Steam smalls	16s.@16s.6d.	**16s.6d.**
Newcastle:		
Best steams	18s.3d.@22s.6d.	*18s.6d.@22s.*
Best gas	21s.6d.	**21s.6d.@22s.**
Best Bunkers	19s.@20s.	*18s.@19s.*

† Advances over previous week shown in **heavy type**: declines in *italics*.



News Items From Field and Trade



ALABAMA

A fire which has been burning for the past 22 years in a coal mine owned by the Brilliant Coal Co., near Jasper, has broken out with new energy. It is estimated that a half million tons of coal has been burned in this mine. At the time the fire broke out and a number of times since efforts have been made to extinguish the flames but without avail.

The Deep Water Coal & Iron Co., of which L. B. Musgrove, Jasper, is vice-president, is reported to be about to absorb the American Coal Co., of which Charles B. Teasley, Montgomery, is president, the holding of which include the Jefferson and Black Creek seams on about 8,000 acres of land on both sides of the Warrior River.

The Alabama By-Product Corporation, which recently absorbed the properties of the Pratt Consolidated Coal Co., and whose holdings now embrace valuable coal lands in Jefferson, Walker, Tuscaloosa and Marion counties, has filed a deed of trust in Jasper, Walker county, for $8,000,000 in connection with the merger.

COLORADO

A compromise is expected to be reached between the coal operators and James Dalrymple, chief coal mine inspector of Colorado, on the new legislation on coal mining laws as the result of recent conferences. The proposed bill amending certain portions of the present Colorado coal mining laws must be presented to the Legislature before Jan. 22.

ILLINOIS

The mine of the Dodds Coal Co. at Carriers Mills reopened Jan. 15 after a long shutdown caused by the bankruptcy of the company. The mine employs 150 men. It was the fourth Saline County mine to reopen within two weeks.

The "Buy Illinois Coal" campaign has received a number of boosts since Christmas, especially by organizations of business men in coal-producing towns. The Pana Chamber of Commerce, for one, directed an appeal to industries throughout the state opposing the use of Kentucky and other outside coal in spite of price differentials favoring the foreign coal.

Shift men were put to work in the old Sunnyside mine, at Herrin, on the Monday before Christmas preparatory to re-opening the shaft. The mine was closed down last June and water was allowed to accumulate at the time. Pumpmen have been at work for several weeks and the water has been pumped out to such an extent as to allow the clean up squad to enter the entries. The mine is one of the oldest in Williamson county still in operation and employed normally approximately 600 miners.

The Jewel Coal & Mining Co. has closed its No. 2 mine at Duquoin for thirty days, according to announcements from the Duquoin offices of the company. The company until recently operated two mines, the No. 1 mine having been closed permanently some time ago.

The mine at Ladd will again be operated for the next three or four months at least. The mine shut down early in December.

Robert M. Medill, former director of Mines and Minerals of Illinois, and Lawrence A. Glenn, receivers for the Jackson Coal Co. mine at Hallidayboro, recently filed petitions in the United States Court at Danville asking for sale of the property. In 1923 the First National Bank of Connellsville, W. Va., filed suit through the federal court in West Virginia. The mine has not been operated since April 30 of last year. The receivers state that it is costing approximately $500 a month to pay maintenance men in the mine, whose duty it is to keep the water pumped out of the workings and protect the underground portion of the mine in general.

INDIANA

The Old Knox Mining Co. has been formed by Carl J. Fletcher, former secretary of the Knox County Coal Producers' Association, E. A. Ogle, vice-president of the Ogle Coal Co., and Burrell Wright, of White, Wright and McKay. This new concern has acquired the two Bicknell mines of the Knox Coal Mining Co., which now goes out of existence as a corporate entity, and expects to operate both mines to produce in the neighborhood of 2,000 tons a day. The output is to be sold through the Ogle Coal Co. The Knox Mining Co., which sold the two mines, was headed by H. A. Huskey and William P. Worth of the Worth-Huskey Coal Co., of Chicago.

KANSAS

District 25, United Mine Workers, embracing most of Missouri, and Leavenworth County, Kansas, recently announced its election of officers with none of the pyrotechnics that regularly accompany such elections in its neighboring district, 14, of Kansas. Arch Helm, Lexington, Mo., was re-elected president; Frank Bunch, of Richmond, Mo., was elected vice-president; George Hepple, of Moberly, was re-elected secretary and treasurer; A. G. Llewellyn, of Novinger, and Pat McKenna, of Lexington, were elected district board members, and Andrew Steele, of Novinger, was elected International board member.

The coal mine at Radley, owned by the Girard Coal Co., has been reopened by its owners after several weeks of idleness. A year ago the mine was leased by the company to a group of miners who planned to operate it cooperatively, but dissension developed among the lessees, the mine was closed and the lease forfeited. The mine employs sixty men.

The executive board of District 14, United Mine Workers, has been advised that the International board in its recent session in Indianapolis refused to consider petitions for a special election in this district because the names of Alexander Howat and other deposed officials and expelled members were excluded from the ballot at the biennial election on Dec. 9. The International board held that until it restores the debarred candidates to full membership in the organization they are not eligible to office.

One of the first bills introduced in the present session of the Kansas Legislature provides a 2 per cent gross production tax on coal and all other minerals produced in the state. A 25 per cent penalty for delinquent payments and 10 per cent interest on such payments are imposed. The bill follows the adoption at the last state election of a proviso giving the Legislature power to classify property for purposes of taxation.

KENTUCKY

The Grass Coal Co., at Bulan, which has changed its name to the Duam Mining Co., controlled by Grass & Fugate, is planning new mine openings, additional miners' homes, and improvements to double present capacity, according to a report from eastern Kentucky, which further stated that the work would start at once. The plant is on Lotts Creek, in Perry County.

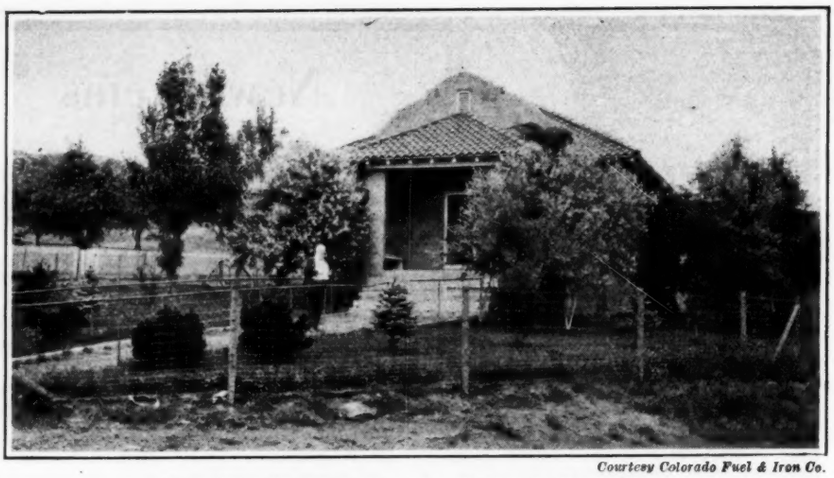
Fred M. Sackett, Senator-elect from Kentucky, was honored by the Louisville Board of Trade on Jan. 14, at the annual meeting, when it was ordered that Mr. Sackett's name be engraved on the club's gold cup, in recognition of his civic service for Louisville. He served

three terms as president of the board, brought Camp Taylor to Louisville during the war, was Kentucky Food Administrator during the same period, and has done other acts to aid the city of his adoption. Mr. Sackett is interested in a number of Kentucky mining companies and is an official of at least six such companies.

The Gorman-Pursifull Coal Co. is about to begin erection of a store and office building in Whitesburg.

The Imperial Elkhorn Coal Co., of Sergent, is planning improvements that will double the capacity of the mines, and will also purchase and develop additional acreage.

In connection with the organization of the Dick Elkhorn Coal Co., capitalized at $250,000, it is learned that this concern proposes to develop a tract of coal in the Elkhorn seam at Douglas, Pike County.



Courtesy Colorado Fuel & Iron Co.

Beautification Progress at a Colorado Coal Mine

Attractive building used as a dispensary at the Primero mine of the Colorado Fuel & Iron Co. Trees, shrubs and lawn create an atmosphere that is wholesome and agreeable.

MINNESOTA

The bid of the Hartzell Fuel & Transfer Co., Minneapolis, to furnish 12,100 tons of coal to the Board of Education has been declared void, because of Mr. Hartzell's membership on the park board. The bid had been accepted and a portion of the order delivered when the ruling was made. Immediate steps were taken to readvertise, and the board is taking bids for 5,000 tons of coal to be received Feb. 3. Mr. Hartzell had wired resignation of his park board membership, but it had not been accepted.

Government reports on the tonnage of coal moved from the docks, as released by the Minnesota Railroad and Warehouse Commission, suggest that hard coal is hardly holding its own against competition. On Jan. 15 there were 485,000 tons of hard coal on the docks, against 212,000 a year ago. Up to Dec. 15 there had been moved 250,000 tons less than to the same date of 1923.

MISSOURI

Clinton L. Oliver, of Kansas City, Mo., head of the Oliver Fuel & Coal Products Co., has leased 600 acres of government coal land on West Elk Mountain, near Montrose, on the output of which he is to pay 12½c. per ton. He is to invest $50,000 in equipment and to develop the property and must produce at least 25,000 tons of coal a year after the mine passes out of the development stage. C. T. Rule is superintendent of the operation. This acreage adjoins 80 acres already under operation by the Oliver company.

NEW YORK

At a regular meeting of the Executive Committee of the Coal & Iron National Bank, held Jan. 21, the present officers were all re-elected, and, in addition, Twining Tousley was made an assistant cashier of the bank.

Wesley P. Montgomery, who was for some time in the coal business in Buffalo on his own account, has been appointed manager of the Buffalo office of the Pittsburgh Terminal Coal Co. He will also keep his former office open for the present. This agency was opened a few months ago by J. A. Doran, who has returned to New York to enter the steel trade.

At a meeting of the board of directors of the Lehigh Valley R.R., Jan. 21, S. B. Thorne, of Thorne, Neale & Co., New York City; vice-president of the Buck Run Coal Co., and treasurer of the Canmore Coal Co., was elected to fill the vacancy on the board caused by the death of Daniel G. Reid.

Judgments amounting to over $11,000 were filed on Jan. 21, against the J. R. Brady Co., a Buffalo shipper and mine operator, by nine creditors, mostly coal shippers in Buffalo and Pittsburgh. The business of the company has been suspended for some time.

OHIO

The West Wheeling mine of the West Wheeling Coal Co. located on the Pennsylvania R.R. at Bridgeport, has resumed operation after an idleness of about 10 months. The mine employs approximately 100 miners.

A royalty of $2,500 is asked by the State of Ohio in a suit brought by Attorney General Crabbe against E. K. McCartney, of Mahoning County, and the Maryland Casualty Co. The defendant is averred to have contracted with the state in October, 1921, to mine coal on two tracts in Monroe County and was to receive a royalty of 10½c. per ton and a minimum royalty of $2,500 per year. The petition alleges that no coal has been mined since Nov. 1 and the royalty for the past year has not been paid.

Deaths resulting from accidents in Ohio mines during 1924 dropped off fully 25 per cent from the records of the previous year, according to Herman Witter, director of the Department of Industrial Relations. In the past year 98 miners lost their lives compared with 130 the previous year. Belmont County, which produces a third of Ohio's production, led the list with 32 fatalities.

Announcement is made that the Diamond Clay Products Co., a recent Ohio corporation, has purchased a tract of 1,200 acres, located near Ulrichsville which is underlaid with several seams of coal which will be developed during the coming year. Included on the tract is the town of Sheridan, consisting of 15 houses, two churches and a school, which will be revised into a modern village, according to Dr. W. T. S. Culp, head of the company. The value of the property transferred is estimated at $2,000,000. Among the things contemplated is the moving of the Ulrichsville plant of the Diamond Clay Products Co., of Sheridan, and the taking over of the Uni-Tile Co., of which Governor A. V. Donahey is president.

The receivership of the Blanchard-Zanesville Coal Co., an operating company at Ellston, north of Zanesville, probably will stop the movement of coal barges used by the company to ship coal from the mines to the power plant of the Ohio Power Co. at Philo, south of Zanesville, on the Muskingum River. The company operated a small fleet of barges, going through the locks at Zanesville which was a most unusual sight for that section of the Muskingum River.

PENNSYLVANIA

The stockholders of the Lilley Coal & Coke Co. held their annual meeting at West Brownsville, Jan. 17, and elected officers for the ensuing year. Thomas Elliott, president, resigned and was succeeded by John H. Moffitt, of Charleroi. Mrs. Jane Elliott, vice-president, also resigned, and was succeeded by James Elliott, of West Brownsville. Guy Moffitt, of Charleroi, was elected secretary-treasurer. Other directing officers of the company are Charles T. Lilley, of Bluefield, W. Va., and Olan Yarnall, of California.

Another abandoned colliery in the Hazleton field has been reopened by the Hazle Brook Coal Co. This is the Peach Orchard mine. It was closed twenty-seven years ago. It is leased from the Lehigh Coal & Navigation Co. and adjoins the Maryd colliery. Work on draining and driving through obstructions in the old gangways, under water for many years, began last May. The coal will be handled through the Maryd breaker. In anticipation of in-

creased production and more employees, the company has erected fifty new homes. If necessary other dwellings will be constructed. The new working connects with the Maryd's first level and it is estimated that as soon as breasts are begun the breaker's production will be brought up to 2,500 tons daily, as compared with 1,500 tons at present.

The Reliance Coke Co., at Denbo, just across the Monongahela River from Brownsville, is firing its ovens. The company has been shipping coal for several months past.

After being employed for 32 years as inside foreman for the Van Wickle estate near Hazleton, Evan Gibbon, of Coleraine, has resigned. Mr. Gibbon entered the employ of the company in 1892 and remained with it continuously up until the time operations were suspended.

The Madeira-Hill Coal Co. is driving two extensive tunnels in the vicinity of Mr. Carmel to connect its Natalie and Greenough mines. The tunnel from the Greenough mine is 3,500 ft. long and has been finished after almost two years' work. The other tunnel is 1,500 ft. long and is about half finished. When the tunnels have been finished the coal from the two mines will be taken through one shaft and run through a single breaker. A modern breaker with a capacity of 5,000 tons a day is to be erected to care for the increased product. The company intends to tap a virgin vein of coal near Mt. Carmel in the near future.

The Maddock Mining Co., near Shamokin, has been notified by the state sanitary commission to stop polluting the head waters of the Schuylkill River by flooding culm into the stream. Pottsville anglers say the culm in the river has virtually killed off all the fish placed there during the past few years.

The Lehigh Coal & Navigation Co. has put into operation a new fan at the Lansford mine that will produce a maximum of 425,000 cu.ft. of air per minute. At present it is producing 300,000 cu.ft. Recent reports of mining inspectors indicate great progress by the Lehigh Coal & Navigation Co. in the way of increased ventilation facilities in its workings. The average number of cubic feet of air per minute per inside employee throughout the state is 521 while the average of the Lehigh Coal & Navigation concern at the time of the last report was 682.

The Pennsylvania Supreme Court has just decided against the Glen Alden Coal Co., other coal firms, and big property owners in a fight against the legality of the 1923 city assessment in Scranton. The companies held that the city had no right to levy a new assessment in a year other than that fixed for the triennial assessment. The city contended that the law gave it the right to change the assessment each year. This contention was upheld by the supreme court.

It will soon be necessary for a change to be made in the personnel of the anthracite conciliation board, as Thomas Kennedy, leader of the miners in the Hazleton district, has been named secretary-treasurer of the international union. This will compel him to resign as president of the district, thus making him ineligible to serve as a conciliator.

Approximately 20,000 tons of anthracite has been taken out of the Susquehanna River at Espy, Almevia, Berwick and Bloomsburg by dredgers during the past six months. The fuel is washed down from collieries and settles in the river bed, from which it is easily salvaged. Most of the coal is stored for use by large industrial plants in the Scranton section. Quite a few men have made fortunes for themselves through these dredging operations during the past several years.

When tonnage reports are compiled for 1924 by the hard-coal companies some startling revelations will be forthcoming from the Hazleton district of the anthracite field. The Tip Top Coal Co., located near Mountain Grove, produced only 2,000 tons for the year and the Scotch Valley Coal Co., in the same district, which suffered from a strike, a fire, a dynamiting and general tie-up, will report no coal shipped to market during 1924. The Cranberry Creek Coal Co., one of the biggest producers of the district, lost considerable tonnage through its strike and also because of water conditions after the storm in September, when 8 in. of rain fell in two days. Tonnage drops throughout the anthracite field will be noted as a result of this storm.

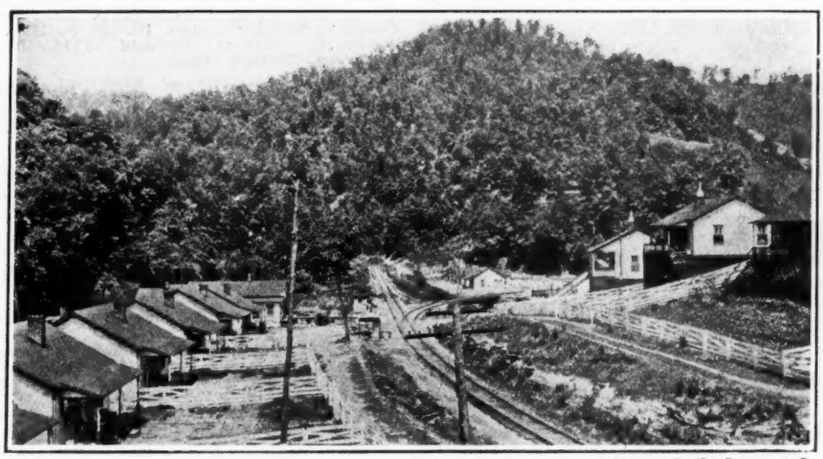
Mine settlements near Barry Junction, on the Hazleton and Mahanoy Division of the Lehigh Valley R.R. at a point near Shenandoah, almost engulfed a 1,600-ton Bull Moose engine recently. A 2 ft. frozen crust of earth broke as the engine passed over the surface, and dropped the locomotive about twenty-five feet. The crew were uninjured.

The Haddock Mining Co., operating Silver Brook mines, plans the erection of a larger breaker as soon as it develops the present underground workings, according to officials of the company. The existing coal-preparing plant is kept busy with the daily output at present. When the mines are all reopened a much larger breaker will be required to handle the output.

The Cameron colliery of the Susquehanna Collieries Co., one of the oldest mining operations in the Shamokin section, will take a new lease of life, it was learned this week, with an announcement of the fact that the company had acquired an additional 346 acres of virgin coal land adjoining the present property. The additional acreage was acquired from the Cameron Estate. The consideration was not made known.

State Mine Inspector Nicholas Evans of Johnstown, Pa., who is also president of the Coal Mining Institute of America, has been confined to his home for more than a month by a severe electric burn.

Employees of the Kingston Coal Co. of Kingston, recently received specially designed calendars from the management. Sections of the mining laws of the state are printed on the calendar with a view of making all workers more familiar with the legal requirements. The reforestation work of the coal company also is reviewed. All told this company has planted 160,000 pine trees since 1921.



Courtesy Bertha-Consumers Co.

Miners' Houses at Consolidated Fuel Co. Operations

These sightly structures are typical habitations for workers at the Kentucky mines of this subsidiary of the Bertha-Consumers Co. The liberal allocation of space to each house assures sunshine and makes it possible for each miner to have a flower or vegetable garden.

UTAH

J. T. Hewell, is the new general manager of the Lion Coal Co. He has been sales manager heretofore.

W. J. L. Wood, for twelve years with the Independent Coal & Coke Co. attached to their California offices, has been appointed superintendent of mines for the Standard Coal Co., Salt Lake City.

WEST VIRGINIA

A rough draft has been prepared of the proposed changes in the state mining laws of West Virginia which will be submitted to the Legislature soon. The bill to be introduced will be in skeleton form so as to permit of further changes in the interim between the initial and second sessions. In the meantime the proposed draft of changes will be submitted to the miners and operators in

various sections of the state for further suggestions or approval. It may be authoritatively stated that the use of locked safety lamps or electric lamps only will be recommended. Other changes will be made in the law with a view to bringing about greater safety in the operation of the mines of the state.

T. L. Lewis, former secretary of the New River Operators' Association and at one time president of the United Mine Workers, is the author of a suggestion that business men, miners and operators have a conference for "an exchange of views to learn the cause of the present condition in the mining communities of the Kanawha district of West Virginia. Mr. Lewis has expressed the view that prosperity is imminent in other parts of the country and believes that Kanawha industries should share in such prosperity.

In the absence of E. S. McCullough, labor commissioner of the Northern West Virginia Operators Association, in the South, where he has gone for the benefit of his health, H. E. Peters, formerly president of sub-district 4, District 17, United Mine Workers, is acting commissioner for the northern West Virginia association.

Announcement has been made of the appointment of Lew Roach, formerly superintendent of the Powellton mines of the Youngstown Sheet & Tube Co., to the position of general superintendent of all mines of the company located in West Virginia and Kentucky. Mr. Roach succeeds the late D. R. Philips in the capacity mentioned.

Preparations are under way for a resumption of operations at the Rock Forge mine of the Connellsville Basin Coke Co. and it is also planned to put the coke ovens in blast. The Rock Forge mine has been closed down since last March.

When defendants failed to appear in connection with 130 eviction cases in the Circuit Court of Kanawha County, judgment for possession was awarded by the court. Plaintiffs in the eviction cases were the Carbon Fuel Co., Cabin Creek Consolidated Coal Co., Illinois Coal Co. and the Basic Coal Co.

The Ben Franklin Coal Co. expects to have the new super fuel plant now in course of installation adjacent to its coal mine at Moundsville ready for operation by Feb. 1. The company also contemplates adding another unit to the plant early in the spring.

Further details of the reorganization of the West Virginia Coal & Coke Co. are furnished by the office of the Secretary of State of West Virginia. Under the reorganization the total capitalization is changed from $14,250,000 to 91,516 shares of "A" and "B" preferred stock at $100 each, or $9,151,600 with par value, and 148,903 shares of common stock without par value and 80,000 additional shares without par value.

WISCONSIN

The Northwest is waiting to see what will happen in the Ford dock case. Ford has bought all the bonds of the Superior Coal & Dock Co., of the defunct Maynard Coal Co., and has started foreclosure proceedings. Ford wants the dock for bonds. The Brown Machinery Co., however, has a claim of more than $100,000 on the dock. Instead of making a lien this company took a second mortgage in order to help the former owners sell their securities. It is now trying to prove the justness of this claim.

CANADA

A brief pit-head strike in the Drumheller district recently was ended by William Ryan, vice-president of district 18, who urged the miners to return to their duties and present their grievances to the operators in a regular way. The workers of three mines walked out for three different reasons, all of which are now being discussed by officials of the union and the operators. It is understood that there is no fear of any further trouble. In connection with this strike, which lasted two days, it is pointed out that the complaints were made by the miners only and not by officials of the union.

The local syndicate, headed by Walter Nichol, Lieutenant-Governor of British Columbia, which acquired and reopened the old East Wellington mine, on Vancouver Island, has been reorganized as the East Wellington Coal Co., Ltd., with an authorized capital of $1,500,000. The East Wellington mine originally belonged to the Dunsmuir group, and some of the best grade of coal ever mined on Vancouver Island was taken from this mine. Owing to the difficulty of operation, the mine was closed at the beginning of the century, and remained closed until about two years ago, when the local syndicate acquired it. For some time it has been turning out about 200 tons of coal per day, the product being marketed by the Canadian Collieries (Dunsmuir), Ltd.

Traffic

New Rates to Northwest Nearly Ready

The new rates from central Illinois and from western Kentucky and West Virginia to the Twin Cities are due to be published soon becoming effective some time in February. The central Illinois rate is to become $3.05. The Kentucky and West Virginia rate is to be $5.40. These changes, when they become effective, will bring about another change all around in the rate schedule, the ultimate outcome of which can hardly be forecast. The splint price will be lower, and this will throw some trade to splint that has heretofore gone to other grades. The adjustment of the Central Illinois rate may divert some business back to southern Illinois.

Coke Rates Lower in New York

The Public Service Commission of New York has approved establishment of rates on the New York Central (East) on coke, coke breeze and coke dust, in car loads, from Syracuse, at the same level as established from Solvay, which effects reductions to various stations on the New York Central, West Shore, Boston & Albany, Delaware & Hudson, Lehigh Valley, New York, Ontario & Western and Rutland railroads. The change becomes effective Feb. 23, 1925.

New Companies

The Hope Coal Co., of Mineral, Kan., has obtained a charter and is operating a mine on a 135-acre lease in Cherokee County that had been idle for a year. It has a contract for its production. The incorporators are George Corkle, D. Castago, George Burley, Emil Ottellio, Joe Brannan, Andrew Burkele, W. M. Aikman, Vincent Zollakar and Leroy Cunningham, all experienced miners living in or near Mineral.

The Coal Consumers Co-operative Association of Toronto has been incorporated with a capital of $25,000. The provisional directors include Harry M. Ford, Edward I. Lester and Wm. A. Strachan.

The Dick Elkhorn Coal Co. has been incorporated, with a capital stock of $250,000, and will operate mines in Pike County, Ky. The company was organized by R. R. Smith, D. C. Schonthal, H. A. Zeller, all of Huntington, W. Va.

The Texas Coal & Mining Co. has been organized in Eagle Pass, Texas, and has acquired the International Coal Mines. C. W. Settle is president; Green F. Harding, secretary, and W. B. McBride, assistant manager. Additional machinery will be installed and the output of the mines increased.

Obituary

Edward F. Fisher, 56 years old, formerly of Pittsburgh, and late of Butler, Pa., died Jan. 17 as the result of an automobile accident. Mr. Fisher was president of the Fisher Smokeless Coal Co., with mines at Butler and Somerset. For the last three years he was sales manager of the Coal Operators' Sales Co. of Butler. He is survived by his wife, one brother and six sisters.

Dan Harry, who was connected with the old Fork Ridge Coal Co. at Middlesboro, Ky., in the early days of coal operations and later with the Superior Coal Co. of Wellston, Ohio, died at the Jewish Hospital in Cincinnati on Jan. 17. He had a wide acquaintance among the operating men and the sales departments of another generation. His son, W. J. Harry, of the Middle West Coal Co., of Cincinnati, survives.

Coming Meetings

American Wood Preservers' Association. Twenty-first annual convention, Feb. 3-5, Congress Hotel, Chicago, Ill. P. R. Hicks, secretary, Service Bureau, 1146 Otis Building, Chicago, Ill.

American Institute of Electrical Engineers. Midwinter convention, Feb. 9-13, 1925, 29 West 39th St., New York City. Secretary, F. L. Hutchinson, 29 West 39th St., New York City.

Northern West Virginia Coal Operators' Association. Annual meeting, Feb. 16, Fairmont, W. Va. Executive vice-president, George S. Brackett, Fairmont, W. Va.

Rocky Mountain Coal Mining Institute, Albany Hotel, Denver, Colo., Feb. 16, 17 and 18. Principal program subjects are rock dusting, underground loading and safety measures. Benedict Shubart, secretary-treasurer, 520 Boston Bldg., Denver, Colo.

American Institute of Mining and Metallurgical Engineers. Annual meeting, Feb. 16-19, 1925, 29 West 39th St., New York City. Secretary, F. F. Sharpless, 29 West 39th St., New York City.

New England Coal Dealers' Association. Annual meeting, March 25-26, Springfield Auditorium, Springfield, Mass. Secretary C. R. Elder, 141 Milk St., Boston, Mass.

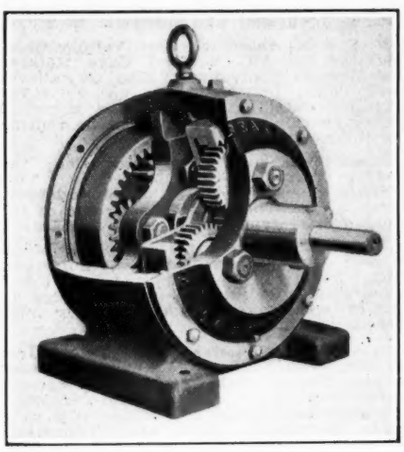
Mine Inspectors' Institute of America. Annual Convention May 19, 1925, at the Jefferson Hotel, Peoria, Ill. Secretary, G. B. Butterfield, Hartford, Conn.

New Equipment

Efficient Smooth-Running Speed Reducer

The speed reducer recently developed by Foote Bros. Gear & Machine Co., Chicago, Ill., is a simple compact and self-contained unit consisting of trains of spur and internal gears.

In the design of this machine, the power is delivered to a pinion revolving between three idler gears which are rigidly journaled to parts of the frame. These idler gears in turn, transmit the power to a large internal gear. In this way the strain is distributed ideally to the idler gears, and the final horsepower is taken from the largest possible leverage, which is the pitch radius of the large internal gear.



Compact and Safe

Any desired speed reduction can be obtained by changing the number of gear trains in this reducer.

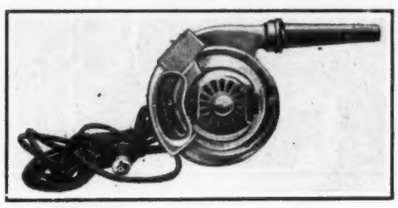
It should be borne in mind that nothing revolves in the gear case except the gears on their own centers. There are no heavy unbalanced units; vibrations, centrifugal force and oil leaks caused by internal pressure, are eliminated.

The slow-speed pinion is keyed to the high-speed internal gear, and for great speed reduction, engages with another set of idler gears which in turn drive another internal gear. Thus it is apparent that it is possible to obtain almost any reduction ratio by simply increasing the number of gear trains and varying the ratio of the pinions and gears.

Small Electric Blower

A portable electric blower that will deliver dry air for removing dust from all kinds of electrical and mechanical equipment has been developed by the B. F. Sturtevant Co., Hyde Park, Boston, Mass.

Compressed air ordinarily contains condensed moisture, but the air shot by this little unit at the rate of 250 ft. per second is dry and thus harmless. The unit does away with air lines and a long hose, because it can be carried from place to place and receive its energy through a reinforced electric extension cord. It is driven by a ⅛-hp. universal motor, designed either for 110 or 220 volts. The switch is located in the handle where it can be readily reached and operated by the thumb.



Blower for Cleaning Purposes

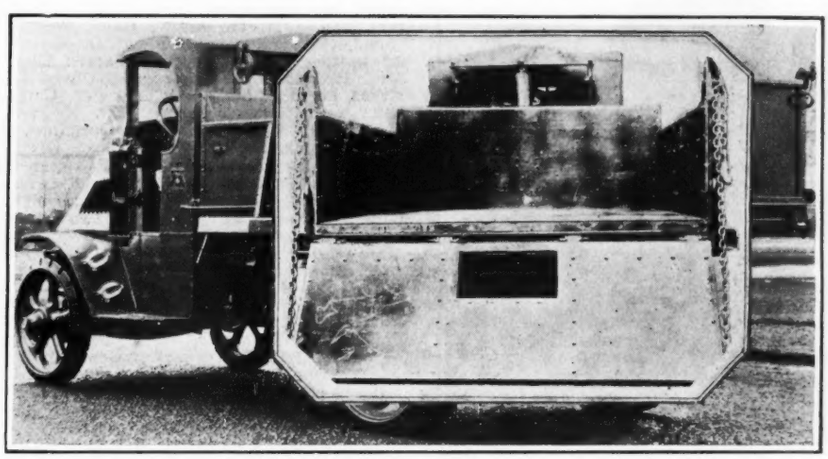
This little type B blower unit will deliver over 40 cu.ft. of air per minute. It is readily portable and provided with a universal motor.

Steel Body of Truck Has Renewable Floor

When the motor truck with it all-steel body first gained recognition as an efficient and economical medium for general hauling, many people soon found that in loading heavy materials, the impact on the floor of the truck would not only leave a permanent indentation but would create strains that distorted the entire body.

After a series of costly experiments; always changing the thickness of the floor steel to something heavier until finally, from one-eight stock, the bed plate measured, in many instances. ⅝ in. in thickness; it was found that, due to the lack of resiliency in sheet steel, nothing lighter than heavy armor plate could resist the shock. Finally a body was built that was the equivalent of placing an all-steel body inside of a heavy all-wood body. The result of this innovation was gratifying, and it seemed to have solved the problem. The heavy 2-in. planking beneath the steel floor not only prevented excessive denting of the steel, but, due to the resistance and resiliency of the hard wood, the body instantly returned to its normal dimensions following each shock. After continuous use, however, it was found that this type of body was expensive when it came time to renew the floor, for the simple reason that it practically meant renewing the entire steel lining.

The final solution has been worked out by the Mack truck body builders, Elizabeth, N. J., in the form of construction that places an independent layer of heavy creosoted planking on top of the original steel floor, above which is an additional reinforcement. In other words, the planking, with its protective covering of steel plate, rests upon the original floor of the all-steel body, and the whole is bound together by a series of flat headed countersunk bolts. This construction, as can readily be seen in the illustration, makes it possible to renew the flooring by simply removing the fastenings and bolting down a new combination. These bodies have been in actual test for some time, and have, in every instance proven extremely satisfactory and economical. In fact, the design has been extended to express and other types of steel bodies.



Built With a Floor That Will Stand the Bumps

Heavy planking is laid upon the original steel floor of the truck. A protective covering of sheet steel is placed over the wood floor and both are securely bolted together. The cushioning effect of the wood reduces shocks when heavy material is dumped in the truck. The flooring can be easily renewed.

Power-Demand Regulator Cuts Electric Bill

A maximum demand regulator for reducing peaks and power demands on electric systems has been developed and placed on the market by Edward T. Moore, electrical engineer, P. O. Box No. 4, Syracuse, N. Y.

The device can be used to limit the amount of power taken by current-consuming devices and is especially adapted for use with large loads such as are imposed by motors and other equipment.

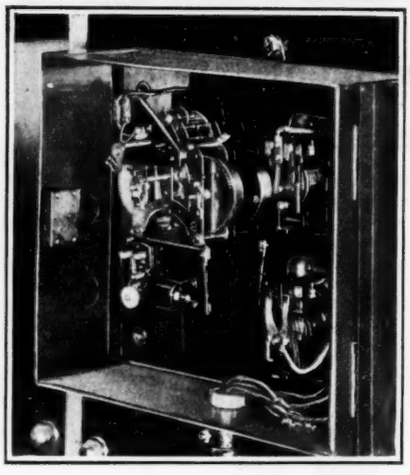
The apparatus is mounted in two pressed steel cabinets, is easy to install and requires practically no attention—yet it is absolutely reliable.

The regulator may be set to limit any power load to a predetermined amount and may be used for any length

of demand period, such as 1 minute, 5, 10, 15, 30 minutes, or 1 hour.

When it is desired to control motors for purposes of peak load reduction it is more desirable to choose as large units as possible and those which can be shut down for the short period of the existence of the peak load. Usually the motor will not be out of service for over one or two minutes at any one time and if the cycle of peak loads or maximum demands is not too frequent this shutdown will not recur at short enough intervals to cause inconvenience or serious interruption.

For motor applications it is necessary to have the operating relay trip the auto-starter or compensator of the motor when the maximum demand occurs. After the peak load has passed a visible and audible signal can be given so that the motor may be started by hand or preferably an automatic starter may be installed to secure full automatic operation.



Holds Maximum Demand

Special contacts function to trip a load when the maximum demand attempts to become too high.

Power Hammer Designed for Use in Small Shops

A utility hammer, a general service tool, has been brought out by the Beaudry Co., Everett, Mass., for shops where there is not sufficient blacksmithing done to warrant any large investment in a power hammer.

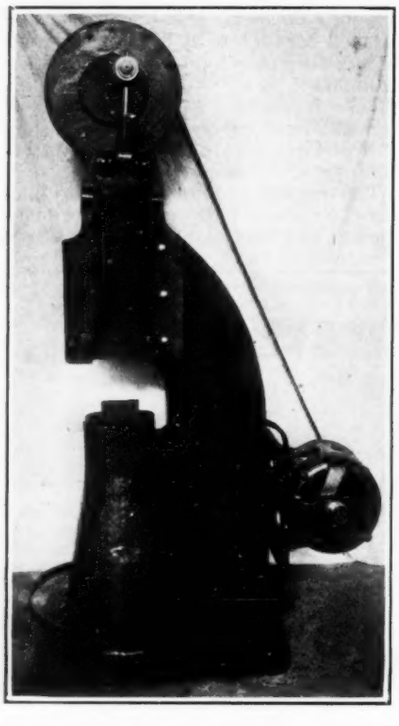
This hammer is built in three sizes, 25-, 50- and 100-lb., and may be operated by an overhead belt running at any angle, or even with a crossed belt. At any time or place the user may employ a motor drive by simply purchasing a motor bracket and bolting to it the necessary motor, no mechanical changes whatever being necessary.

The hammer is started, stopped and regulated as to speed and force of blow through the foot treadle which throws in or out a cone clutch fitted into the hammer pulley. The clutch surfaces are lines with a brake lining. This clutch is self-adjusting and requires no attention.

MAY BE BOLTED TO FLOOR

Considering its size, the tool has an exceptionally long stroke and may be operated at a high rate of speed. Being self-contained and cast in one piece it requires no extensive foundation and in many cases may be bolted direct to the floor without any other support.

The ram operates in heavy V-shaped guides and has in addition an adjustable taper gib for taking up the wear, which means that the ram can only have an up and down movement. There is no side play, which means that the machine can be used for accurate die work.



Self Contained Hammer

The speed and force of the blower is regulated readily by the workman. But little floor space is required for the complete outfit.

Association Activities

At the annual meeting of the Pittsburgh Coal Exchange, Jan. 15, the following officers were re-elected: President, William B. Rodgers; vice-presidents, C. C. Bunton, A. B. Sheperd and J. Frank Tilley; secretary and treasurer, Mr. Tilley; directors, James Moren, A. W. Dann, John L. Howder, J. A. Donaldson, A. O. Ackard, J. G. Geegan, Mr. Bunton, Warren Elsey, Mr. Rodgers, Mr. Sheperd, Christ A. Evers, A. B. Budd and Charles T. Campbell; executive committee, Mr. Rodgers, Mr. Elsey, Mr. Bunton, Mr. Geegan, Mr. Budd, Mr. Moren and Mr. Tilley.

The West Kentucky Coal Bureau at its eighth annual Meeting in Louisville, Jan. 13, admitted the Luton Mining Co. to membership. Percy D. Berry, of Providence, was re-elected president; J. D. Overall, of Madisonville, re-elected vice-president, and C. E. Reed, of Louisville, re-elected secretary. The following were elected to the executive committee: F. P. Wright, of Bevier; C. F. Richardson, of Sturgis; G. S. Miles, of Memphis, Tenn.; Alex. Blair, of Baskett; H. L. Tucker, of Central City; A. W. Duncan, of Greenville, and M. B. Lanier, of Birmingham, Ala. The following committees were continued and composed as follows: Committee on Conservation, Safety and Research, Messrs. Sterling Lanier, C. A. Reis, W. G. Duncan, Jr., N. E. Jones, Brent Hart. Clean Coal Committee, Messrs, M. B. Lanier, J. L. Rogers, J. E. Palmer, C. F. Richardson and Justin Potter. Audit Committee, Messrs. Alex. Blair and J. D. Overall. Louisville was selected as the next meeting place.

Trade Literature

Welding Electrode, Type A. General Electric Co., Schenectady, N. Y. Pp. 12; 5½ x 7¾ in.; illustrated. Details are given on electrode construction and characteristics. Results of tests on welded cast-iron specimens and deposited metal specimens are described and oscillograms demonstrating arc stability are reproduced. Instructions for the use of the electrode are supplied and specifications of the standard sizes given.

The Mesta Machine Co., Pittsburgh, Pa., has published the following bulletins. **Gear Drives;** bulletin B; 24 pp.; 7½x10½ in.; illustrated. Describes the process of manufacture of the company's gears and drives, with a number of photos showing them installed. **Forging Ingots;** four-page folder showing ingot casting pits and giving sizes and weights. **Una-Flow Engines;** bulletin U-2; four-page folder telling of the advantages of these engines.

Russell U-Tube Storage Heater; Griscom-Russell Co., New York City; bulletin 242; pp. 15; 8x11 in.; illustrated. Besides a complete description with details of construction and specifications of this heater, the bulletin also contains a table of data which, it is asserted, has not hitherto been published on not water requirements for various industrial and domestic uses.

E. C. & M. Automatic High Voltage Compensator for A.C. Squirrel Cage Motors; The Electric Controller & Mfg. Co., Cleveland, Ohio; bulletin 1047; pp. 4; 8x10½ in.; illustrated. Describes the complete safety provided for the operator as well as for the electrical equipment.

Mine Fans and Mine Ventilation; the Jeffrey Mfg. Co., Columbus, Ohio. This bulletin, written by W. J. Montgomery, gives a comprehensive idea of some of the fundamental principles of mine ventilation.

Universal Blowers for Coal and Metal Mines; the Jeffrey Mfg. Co., Columbus, Ohio; bulletin No. 408; pp. 8; 7½x10½ in.; illustrated. Recent changes in design of Jeffrey small blowers for secondary mine ventilation are described.

Gasoline Locomotives. The Vulcan Iron Works, Wilkes-Barre, Pa., has just issued a new 20-page bulletin, No. 101, devoted exclusively to the Vulcan worm-gear drive gasoline locomotive. In addition to a complete description there are illustrations showing various parts of the locomotive. A 4-page leaflet is enclosed giving the rated hauling capacities of all the popular sizes from 3 tons to 25 tons. This bulletin will be mailed free to all prospective users of gasoline locomotives.

Industrial Notes

William H. Utz, vice-president and formerly European director of Jenkins Bros., Ltd., with headquarters at London, England, has been made director of sales in the United States of **Jenkins Bros.**, valve manufacturers.

The Electric Service Supplies Co., of Philadelphia, announces that it has assumed the exclusive sale and distribution of the entire output of the Franklin Porcelain Co., Norristown, Pa., manufacturers of high-voltage porcelain insulators and fittings.

The Smith & Woodbury Co., 55 Second Street, Portland, Ore., has been appointed distributor for Oregon and southwest Washington by the Chicago Pneumatic Tool Co., and will stock a complete line of pneumatic and electric tools, rock drills, air compressors and semi-Deisel oil engines to meet the requirements of the territory covered by this arrangement.

The engineering and surveying business conducted by Harry M. Walker has been merged with that heretofore conducted by H. M. Kanarr at Punxsutawney, Pa. The offices of the company will be Rooms 17 and 18, Swartz Building. The new business will be conducted under the name of the **H. M. Kanarr Co.,** and under the direction and management of Mr. Walker, with Mr. Kanarr acting in an advisory and consulting capacity.

O. L. Chapman has joined the sales organization of the **Scott Valve Manufacturing Co.,** of Detroit. Mr. Chapman is widely known in the industrial field throughout the United States, and will devote his time to the application of valves to manufacturing plans and similar lines of industry.